UNIVERSITY OF CAPE COAST

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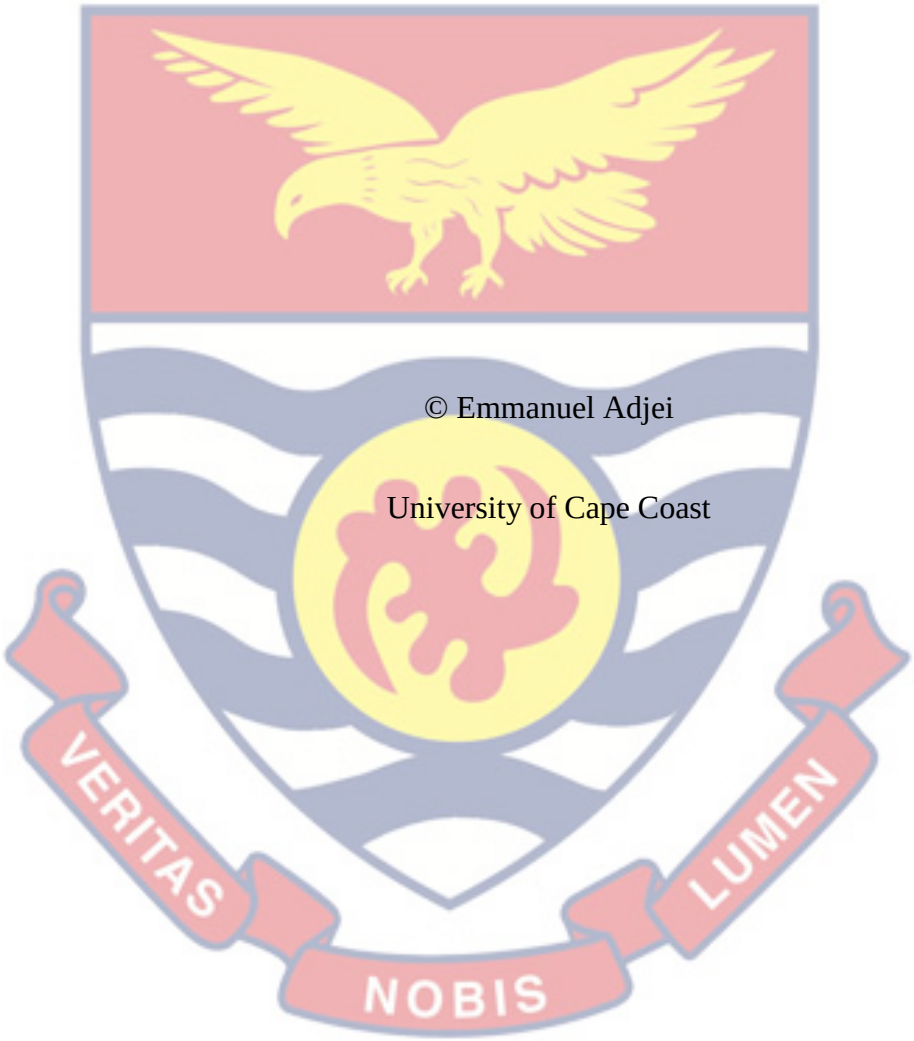
EMMANUEL ADJEI

2022



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BY

EMMANUEL ADJEI

Thesis submitted to the Department of Education and Psychology, Faculty of Educational Foundations of College of Education Studies, University of Cape Coast, in partial fulfillment of the requirements for the award of Master of Philosophy degree in Measurement and Evaluation

OCTOBER 2022

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature……Date…….

Name: ……

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Supervisor's Signature……..Date……..

Name: ……..

ABSTRACT

The study aimed at investigating study habits and test anxiety as correlates of the Senior High School students' academic achievement in the Ekumfi District in the Central Region of Ghana. Quantitative approach was employed using descriptive survey design. The five Senior High Schools in the district were purposively selected. Proportionate stratified random sampling was used to obtain the sample size for each school. The simple random sampling (lottery method) was used to select the three hundred and six participants for the study. Questionnaire was used as main data collection instrument. The overall reliability coefficient of the 68-items was 0.76 and 0.89 for study habits and test anxiety respectively. The data collected was analysed using percentages and frequencies, mean and standard deviations, independent sample t-test and multivariate multiple linear regression. The findings from study revealed that the students practiced a combination of all the study habit domains which include: time management, concentration, homework and assignment, time allocation, reading and note taking. The study showed that generally, the students experienced high test anxiety. Again, it was discovered that concentration-related study habits contribute significantly to students' academic achievement. Based on these findings, it was recommended that the Guidance and Counseling Coordinators of the Senior High Schools should be equipped to tackle challenge of high test anxiety among the students in order to boost their academic achievement.

KEYWORDS

Study habits

Test anxiety

Academic achievement

Students

Practice

Core subjects

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DEDICATION

To my children Stacey Nhyira Adjei and Alvin Kwame Nyamekye Adjei.

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CHAPTER ONE

INTRODUCTION

The study was conducted to ascertain the kind of study habits Senior High School students adopt in their studies, the level of anxiety the students experience and how these two variables impact on their academic achievement. Most students perform woefully in their academic pursuit with lots of self-questioning regarding what the causes could be. Some students attribute the cause to the teaching methods of their teachers, school administration, classroom conditions, and personal factors such as study habit and level of anxiety during examination.

A number of studies have been conducted on factors that enhance academic achievement and have reported that study habits of the students and the level of anxiety they experience during exams play a significant role in their academic achievement. However, the kind of study habits and the appropriate level of anxiety that improve academic achievement have received divergent views.

Background to the Study

Recent demand for quality education has increased as a result of the adoption of international conventions aimed at increasing access to education for all people, regardless of socio-cultural, economic, or religious background, as educational systems around the world have undergone significant changes (Kgosikebatho, 2013; Akyeampong, Djangmah, Oduro, Seidu and Hunt, 2007). In September 2000, Ghana signed the Education for All (EFA) initiative and the Millennium Education Goals in Dakar, Senegal, with the aim of providing a quality basic education to all school-aged children. Therefore,

Ghana demonstrated dedication to achieving Universal Basic Education through the introduction of measures such as infrastructure, support services and the provision of learning materials (Education Annual Report, 2013). As a result, the number of students enrolled in Senior High Schools has risen in recent years due to these efforts (Akyeampong, Djangmah, Oduro, Seidu & Hunt, 2007).

Scholars, however, argue that the quality of education and effective learning outcomes are more directly connected to a country's economic progress than the number of students enrolled (Hanushek & Wobmann, 2009). Given this, it could be deduced that it is important to increase enrolment but not adequate in measuring the quality of the school. Studies have been conducted to discover factors that either promote or stifle students' academic accomplishments. Tshabalala and Ncube (2013) discovered in their study that insufficient instructional resources, ineffective teaching techniques, teacher self-motivation, and a lack of funds had a significant impact on student academic achievement. Nyaboga, Bosire, and Ajowi (2016), supported this claim by revealing internal classroom variables that impact students' academic performance. They opined that internal variable like teacher ability, the number of students enrolled in the class, inadequate teaching and learning resources, and teacher motivation have an impact on students' academic achievement. School-related variables such as class size and supervision, for example, are determined by policies that are not controlled by students; nevertheless, what students can control is the way they learn (Gettinger & Seibert, 2002).

Existing research has shown that cultivating healthy study habits has a positive impact on an individual's educational fortunes. Scholars such as Fielden (2004) and Romeo (2006), argued that good study habits allow a student to focus objectively on ability outcomes such as choosing, assessing, criticising, and synthesising. This position is supported by educational theorists such as Ebele and Olufo (2017), who believed that study habit is one of the most important learning variables that have a significant impact on students' academic performance. These experts noted that if students at all levels do not develop good study habits, educational stakeholders like instructors, administrators, teachers, government, and parents or guardians will bear the brunt of the consequences in the future as a result of their poor performance in both internal and external examinations, as well as their future contribution to the country's economic growth.

Likewise, Mark and Howard (2009) maintained that, lack of successful or strong study habit is the most common threat to students' progress in all ramifications. They further indicated that if students develop a strong study habit and practice good academic discipline, they are bound to be successful in their academic endeavours. Deductively, effective learning habits enable learners to use their reasoning ability to identify and assess specific corpora of knowledge. Cardelle-Elawar and Nevein (2003), theorised that study habit refers to the conscious and purposeful use of one's cognitive capacity, emotions, and behaviour to optimise knowledge and skill development for a particular activity and set of conditions. Cardelle-Elawar and Nevein, again indicated that, study habit is the use of one's intellect,

emotions, and behaviours towards the acquisition of relevant attitude, skills and knowledge in order to complete an assignment.

Logically, an effective and efficient study habit depends on good analytical abilities, positive emotions, and specific practices that are actively aimed at building awareness and improving skills to achieve an objective. Also, Crede and Kuncel (2008) indicated that, the analysis of samples, self-questioning and the practice of learned samples are components of study habit. These scholars' views indicate that study habit involves students' personal dedication to understanding concepts, updating, and personally evaluating one's ability to discern the degree to which subject matter consolidates. They added that, students cannot perform creditably well without practising good study habits.

Consistent with these revelations, Congos (2010), presented six dimensions of study habits which include; time management, concentration, note-taking, memory, textbook reading, and test preparation. He explains that good time management is a crucial part of good study habits that can enable one to perform better. Effective time management skills include studying on a regular and daily basis, making schedules, study plans, and timetables, and effectively utilising time. Spending extra hours studying with a lack of attention does not constitute proper time management. Concentration is another important aspect of good study practices. It is the capacity to concentrate when studying without paying attention to distractions.

Note-taking, on the other hand, is more than simply writing down the salient points during lectures; it also necessitates a high level of concentration and listening aptitude in order to adequately capture the lecture's key points.

Study habits include strategies for memorisation of newly learnt content. Effective textbook reading involves not just reading but also absorbing the information via the development of themes and major concepts. Test preparation entails studying content from the domain of knowledge sampled by the assessment as well as practicing skills that allow students to exhibit their knowledge on various types of assessment exercise.

Ringeisen, Buchwald, and Hodapp, (2010) observed that, it is an irrefutable reality that students, regardless of their level, have the difficulty of coping with assessment all over the world. This is due to the fact that the test results are used to make crucial decisions concerning the person who takes it, which causes some anxiety among those who take it. According to Shokrpour, Zareii, Zahedi, and Rafatbakhsh, (2011) test anxiety is a feeling of unease or uncertainty caused by stress or dread before, during, or after a test. It is important to note that test anxiety affects persons of all ages who are examined, tested, or graded on their talents, abilities or accomplishments.

As a result, test anxiety affects students at all academic levels, including elementary, secondary, and postsecondary (Akanbi, 2013). Fulton (2016) opined that in the mid-1980s, around 10 million primary and high school students suffered from test anxiety. Between one and three students in a normal classroom of 25 students, including students of ordinary intelligence, students with learning difficulties, and even brilliant students, were shown to be at risk of acquiring test anxiety.

The degree of test anxiety varies from person to person. A little bit of anxiety may be beneficial since it serves as motivation and encourages learners to strive for excellence (Akanbi, 2013). However, too much anxiety

can disrupt the mental abilities that learners use to succeed on exams, thus test anxiety can be minimal, normal, or severe (Casbarro, 2005). Many students with test anxiety struggle to focus on the test questions, resulting in poor test performance.

In this context, Atasheneh and Izadi (2012) argue that test anxiety is one of the major emotional filters that influence learning success and or failure. They indicated that test anxiety has the tendency of triggering undesirable behaviours in learners prominent among them are; students speeding through exams in order to avoid the unpleasant experience, students refusing to finish the required number of questions, and students abandoning the test without making any effort in responding to the questions. This indicates that test anxiety, if not recognised and treated properly, will have a detrimental impact on test takers' performance or achievements, regardless of their level.

Moreover, study habits and test anxiety are prepense to align with each other. They are seen to have some sort of relationship. Thus, individuals with good study habits experience low anxiety as compared to their counterparts with bad study habits (Crede & Kuncel, 2008). According to Salend (2011), Students who experience test anxiety tend to be easily distracted during a test, experience difficulty in understanding relatively simple instructions, and have trouble organising or recalling relevant information. To him, excessive anxiety can hinder thoughts, create a negative frame of mind, and lead to panic and potentially poor academic performance. He further observed that students experience some level of stress while preparing for an exam.

Appropriate levels of stress can enhance students memory, attention, motivation, and can lead to improved test performance.

Anxiety in literature is a condition of anxious, worry or unsure about an imminent or ongoing assessment programme (Okorodudu & Ossai, 2004). According to Chapell, Blanding, Takahashi, Silverstein, Newman, Gubi, and Mccann, (2005), test anxiety is a collection of phenomenological, psychological, and behavioural responses that follow concerns about possible adverse effects or failure in the assessment or related evaluation. They added that, test anxiety is a mixture of physiological over-arousal, stress and somatic symptoms, along with worry, dread and fear of failure that occurs before or during testing situations. They opined that test anxiety is a state of an individual's mental disposition at the time of taking the exams and it is triggered based on the study history of the test takers. According to Putwain (2008), test anxiety is experienced when the demands of evaluative settings provoke the fear of failure, the risk to self-worth and apprehension about being assessed by others.

The significance of students' study habits and their relation to their academic achievement cannot be underemphasized. Gettinger and Seibert (2002) theorised that effective study habits are crucial in avoiding academic failures. They stated that poor study habits cause students to struggle academically, resulting in poor academic achievement. They further construed that learners who engage in insufficient study practices are more likely to perform poorly academically. Thus, developing effective study habits have the tendency of improving their educational abilities and more positioned in eradicating failure.

A theory by Bakare (1977) found that students' study habits have a significant impact on their academic achievement since academic success is heavily reliant on reading in the pursuit of information and facts. A meta-analysis by Kuncel (2008) highlighted that, in addition to motivation and anxiety, study habit is the third most important predictor of academic success. Likewise, Nuthana and Yenagi (2009) have examined the causes of poor academic performance among university undergraduates, and poor study habit was discovered as one of the major causes.

Azikiwe (1998) postulates effective study habits are significant to students because they (habits) help learners achieve mastery in areas of specialty and create outstanding achievement in their academic pursuit, whereas the opposite creates barriers to learning and performance, resulting in failure. The results of the above studies confirm that students' academic performance is influenced by their study habits. Understandably, appropriate study habits lead to good academic attainment and vice versa.

According to Kass (2013), for students to ensure academic success, they must eschew bad study habits, and regardless of age and academic level, employing effective study habits can make all the difference. He further states that, students should identify their study preferences, what works for them consistently and act accordingly. Despite the extensive knowledge and empirical support that study habits affect academic performance, Geiser (2000) observes that students have different ways of learning which intuitively implies that not all methods of studying will be universally effective. The issue is which study habit is appropriate and effective to produce good academic performance?

In Ghana, several studies have revealed that students adopt different study habit during their period of learning and each has an effect on their academic achievement (Bashir & Mattoo, 2012; Bentil, Esi-Donkoh, and Ghanney, 2018). However, the kind of study habits practiced by Senior High School students in the Ekumfi District, their test anxiety and its relation with their academic achievement was not found in the literature reviewed, hence, the relevance of this study.

Statement of the Problem

Education is regarded as a fundamental right of every Ghanaian child living in the country as enshrined in the 1992 constitution of Ghana. As a result, all successive governments have made conscious effort to sustain this constitutional mandate by ensuring that every child of school-going age goes to school. This has been made possible by the institution of various policies and interventions such as Free Compulsory Universal Basic Education (FCUBE), Free Senior High School (FSHS), free school uniform, capitation grant, school feeding programme, the free past question for final years, school infrastructure, boarding and hostel facilities and qualified trained teachers to achieve this constitutional mandate.

One would expect that with all these conditions in place, Senior High School students will go for the examination well prepared, and write their West African Senior School Examination (WASSCE). However, this is not the case. Students go to the exam halls either unprepared or half-prepared and resort to all manner of unacceptable behaviours such as sending foreign materials to the exam halls, refusing the standard of sitting arrangement and exhibiting other undesirable examination misconducts (myjoyonline.com,

2020). An example is the June 2020 West African Senior School Examination (WASSCE) students in some Senior High Schools in the country rioting during their integrated science paper resulting in attacks on invigilators, West African Examination Council (WAEC) officials, journalist and school authorities which led to the dismissal and barred of fourteen (14) students from writing the rest of their papers which they were later re-called following the intervention of the President (ges.gov.gh, 2020).

In 2017, 236 Senior High School West African Senior School Examination (WASSCE) results in the Central Region were cancelled (waec.gov.gh, 2017). This represents 4% of the total students of 30,545 candidates who sat for the May/June WASSCE exams in the region. 63 students out of 236 students representing 26.7% were students in the Ekumfi District (waec.gov.gh, 2017). A similar incident was reported in 2018 during May/June WASSCE exams where five students were arrested for impersonation. Three out of the five were reported to be students in the Ekumfi District (The Times-News Paper, June 13, 2018). Again, in 2019, it was reported that eight students collapsed and seven others were found vomiting at the examination hall during WASSCE Mathematics paper in some of the Ekumfi schools (Ghanaweb.com, 2019).

School WASSCE result statistics obtained from the examination unit of Ekumfi Education Directorate shows a decreased performance where students pass rate keeps on decreasing as summarised in Table 1.

Table 1: Performance of students in WASSCE (2017-2019)

Year	Total Number of Candidates	Number of Candidates Passed	Percentage Passed
2017	1,120	542	48.4%
2018	1,234	490	39.7%
2019	1,115	416	37.3%

Source: Ekumfi Education Examination Unit (2019)

These rising phenomena have become a worry to parents and other stakeholders in the Ekumfi District and keep attributing them to the study habits of the students and their exposure to anxiety during exams. Consistently, the Chief Examiners report of West African Examination Council (WAEC) indicated that students across most of the subjects failed to adhere to the demands and dictates of the rubrics and cited lack of adequate preparation, lack of knowledge of the subject matter and deviation in answering the questions as some of the causes of the student's low performance and also appealed to teachers to assist students in that regard (Chief Examiners Report 2016, 2017, 2018 and 2019).

Literature has shown that, students' attitude, emotions, and or reasoning can be altered during the examination due to the feeling of uneasiness or anxiousness (Sweetnam, 2002; Austin, Partridge, Bitner & Wadlington, 1995; Cassady, 2001). However, there is no enough empirical evidence to support these claims in the Ekumfi District in the literature reviewed. Therefore, this study aimed at bridging the literature gap.

Purpose of the Study

The purpose of the study is to investigate the nature of study habits, and test anxiety of Senior High School students in the Ekumfi District, and their correlates with academic achievement in the four core subjects; English Language, Integrated Science, Mathematics and Social Studies. Specifically, the objectives of the study were:

1. Determine the type of study habits SHS students practice in their learning in the Ekumfi District.
2. Find out the level of test anxiety among SHS students in the Ekumfi District.
3. Examine the relationship between study habit and academic achievement among SHS students in the Ekumfi District.
4. Investigate the relationship between test anxiety and academic achievement among SHS students in the Ekumfi District.
5. Find out the relationship between gender and study habits.
6. Find out the relationship between gender and test anxiety.
7. Find out the extent to which study habits and test anxiety predict the academic achievement of SHS students in the Ekumfi District.

Research Questions

The study is guided by the following research questions:

1. What study habits do SHS students in the Ekumfi District practice in their learning?
2. What is the level of test anxiety among SHS students in the Ekumfi District?

3. What is the relationship between study habits and academic achievement among SHS students in the Ekumfi District?
4. What is the relationship between test anxiety and academic achievement among SHS students in the Ekumfi District?

Research hypotheses

1. H_0: There is no statistically significant difference in the study habits of males and females SHS students in the Ekumfi District.
   H_1: There is a statistically significant difference in the study habits of male and female SHS students in the Ekumfi District.
2. H_0: There is no statistically significant difference in the test anxiety of male and female SHS students in the Ekumfi District.
   H_1: There is a statistically significant difference in the test anxiety of male and female SHS students in the Ekumfi District.
3. H_0: Study habits and test anxiety will not predict the academic achievement of SHS students in the Ekumfi District.
   H_1: Study habits and test anxiety will predict the academic achievement of SHS students in the Ekumfi District.

Significance of the Study

The findings of the study will be of significance to students, researchers, teachers, and policy makers. It will help students to discover the best study habit to adopt to attain maximum academic achievement. To the researchers, it will serve as reference material for further studies on the topic. The study will guide policy makers to enact policies on study habits and test

anxiety among students. Finally, the findings will create awareness among teachers on the nature of study habits and test anxiety among their students.

Delimitation of the Study

The study focused on the study habits, test anxiety and academic achievement of Senior High School Students specifically, those in form three. The study is delimited to the four core subjects; English Language, Integrated Science, Mathematics and Social Studies. Geographically, the study is delimited to the five Senior High Schools in the Ekumfi District in the Central Region of Ghana.

Limitations

The study had some limitations. Firstly, due to lack of knowledge and unenthusiastic attitude towards research work especially in answering questionnaire, out of 306 questionnaires distributed, 278 were fully completed and retrieved for the study, this represented a returned rate of 91%.

Secondly, nationwide coverage would have been the ideal situation for the study. This would have given much confidence for the generalization made. However, due to resources available and time for the study, it was impracticable. Hence the selection of only public Senior High Schools in the Ekumfi District in the Central Region of Ghana.

Finally, the study involved examination scores obtained in the end of year District mock conducted by the Ekumfi District Directorate of Ghana Education Service. Therefore, the researchers could not vouch for the standardization, validity, and reliability of the examination results.

Definition of Key Terms

For the purpose of this study, certain terms used are explained below:

Study habit: It is a behaviour cultivated by the students and constantly practised as a daily academic routine to maximise the learner's academic success.

Test anxiety: Is defined as an individual's expression of fear in relation to the outcome of examinations.

Academic achievement: It refers to the observable and measurable behaviours of an individual in English Language, Mathematics, Integrated Science and Social Studies.

Organization of the Study

The research was organised under five (5) main chapters. Chapter one looked at the background to the study, statement of the problem, research questions, research hypotheses, purpose of the study, the significance of the study, the scope of the study and organisation of the study. Chapter two dwelled on the literature review of relevant materials on research that is related to the area of study of the research, chapter three touched on the methodology that is, study area, research design, population, sample and sampling procedure, data collecting instruments, and data collection procedure. Chapter four looked at data presentation, analysis and discussion which included the presentation of questionnaire results and findings.

Chapter five looked at the overview of the study that is a summary, conclusions and recommendation.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter reviews literature related to the study**.** It presents the theoretical framework, conceptual review, empirical review, and conceptual framework. The theoretical framework was reviewed which deals with the theory of study habits and test anxiety followed by conceptual review which touched on the meaning of study habits, meaning of test anxiety, concept of academic achievement. The empirical review delves into previous studies to gather views on work done in the area, identify gaps in earlier studies to contextualise this study. The specific areas touched are; study habits practised by students, levels of test anxiety among students, relationship between study habits and academic achievement, relationship between test anxiety and academic achievement, gender and study habits, gender and test anxiety, and study habits and test anxiety as predictors of students' achievement. Finally, the conceptual framework.

Theoretical Framework of the Study

This study was guided by Bakare (1977) Study Habits Theory and Theory of test anxiety by Cassady and Johnson (2002)

Bakare (1977) Study Habits Theory

Study habits as expound by Bakare (1977) entails eight major competences which he contends that if students pay attention to have the potential of enhancing their academic achievement. He, however, noted that if students exhibit lackadaisical attitudes towards them in the course of their studies stand the chance of suffering the dire consequences of them which are

failures in their academics. The study habits competences as defined by Bakare are; time allocation, homework and assignment, concentration, study period procedures, written work, reading and note-taking, exams taking and instructor consultation. Bakare (1977) used his study habit inventory to conduct many studies and concluded that study habit variables correlate positively with academic achievement.

Bakare (1977) theorised that when students attach seriousness to every assignment or homework that is given to them at the end of every lesson and answer the questions effectively, it serves as means of revising the lesson taught at school and this helps them to further understand the concept demonstrated by the teacher in the course of the lesson. This enables the students to excel in exams. He observed that prudent and effective use of time allocated for studies enables the students to learn enough the course materials which in turn reflect on their academic achievement. Reading and note-taking were conceptualised by Bakere (1977) as an important component of his study habits inventory because writing the salient points during lectures or classes and reading them help the students to assimilate and comprehend the content of the lesson.

Studying in a conducive environment devoid of distractions of any kind improves the ability of the mind to absorb whatever that is learnt. Concentration according to Bakare's (1977) theory is key in performing academic exercise which has the potential of improving performance. He added that all the other components as has been enumerated have a unique role to play in improving performance academically. When learners consciously practice them in the course of discharging their academic duties,

their academic life will be prosperous. Asides Bakare (1977), other investigators have applied this theory in their research.

Research conducted by Salami and Aremu (2006) using this study habits inventory model discovered a correlation between study habits and academic achievement. Similarly, Bagongon and Connie (2009) researched on the impact of study habits on the academic achievement of freshmen education students in XAVIER University, the study revealed a positive correlation between the two variables. Thus, study habits and academic achievement. In the same vein, Tope (2011) investigated the contribution of study habits on the academic achievement of learners, using the Bakare (1977) study habits inventory model. It was realised that study habits impact students' academic achievement.

Again, in a study conducted by Aluede and Onolemhemhen (2001) to investigates the effect of counselling on senior secondary school student's study habits and academic achievement in English language. The study included 108 Lumen Christ secondary school senior secondary school form one and two students from Uromi, Edo State, Nigeria. The study habit inventory developed by Bakare (1977) was used, and the results revealed that advising students on good study habits improves their academic performance. Based on the literature review, Bakare's (1977) study habits inventory has been widely used by scholars in different of contexts. In most of the studies, it was found that this study habit inventory has impact on students' academic success.

These revelations suggest that good or effective study habits leads to high academic achievement whereas bad or ineffective study habits leads to

failure or low academic achievement. Although Bakare's (1977) original study habits inventory contained a number of components, this study would focus on five of them. These include; reading and note-taking, homework/ assignments, time management, concentration, and time allocation. These factors were considered in the study because they are relevant to the Ghanaian educational context, and the findings would have implications for policy formulation and effective learning.

Theory of Test Anxiety by Cassady and Johnson (2002)

Early studies conducted on test anxiety reported the construct as one distinct attribute which could be measured and quantified on a single dimensional scale (Sarason, 2016). However, even with this single measure, at least two manifestation of test anxiety was discovered. This according to Sarason (2016) are ‘‘heightened physiological activity’’ and “self-deprecating ruminations” which are together known as interfering anxieties. This anxiety is experienced by students during evaluative situations due to the fear of the undetermined consequences on the test. Due to the enormous study into the construct, it was widely accepted that text anxiety has two dimensions in the early 1970s which traditionally referred to as emotionality and worry (Spielberger, Gonzalez, Taylor, Algase & Anton, 2000). These researchers aimed at creating better measure for test anxiety and the determination of differential measure for the two factors.

In the light of this, Cassady and Johnson (2002), expatiated this theory and stated that emotionality is the individual’s subjective awareness of the heightened autonomic arousal rather than the arousal itself. It is physiological responses experienced through testing situations and manifest in different

forms such as (1) increased galvanic skin response and heart rate, (2) dizziness, (3) nausea, or (4) feelings of panic. It was further stated that even though emotionality is a distinct dimension of anxiety, high emotionality has a debilitating effect on academic achievement. They indicated that individuals who are exposed to emotionality also experience high level of worry which is the second dimension of anxiety known as cognitive test anxiety.

Cognitive test anxiety refers to the individuals' mental disposition to evaluative situations, or internal dialogue regarding evaluative situations, and is experienced before, during, and after evaluative tasks. Individuals dealing with high levels of cognitive test anxiety manifest in:

1. Comparing self-performance to peers
2. Considering the consequences of failure
3. Low levels of confidence in performance
4. Excessive worry over evaluation
5. Causing sorrow for their parents
6. feeling unprepared for tests
7. Loss of self-worth.

Cassady and Johnson (2001) further elaborated the interdependence between the two dimensions: emotionality and cognitive test anxiety (worry). They opined that, high levels of emotionality negatively influence test performance and under conditions where the individual also experienced high levels of worry, suggesting that worry is the primary performance predictor. Thus, high levels of emotionality were considered to be benign for exams when the individual maintains a high level of self-confidence regarding performance.

The driving force of this research was to determine the level of test anxiety and its correlation with academic achievement. High levels of test anxiety were found to be negatively correlated with:

1. Intelligent Quotient (IQ)
2. Aptitude
3. Academic achievement in reading; English, Math, Natural Sciences, Foreign Language, Psychology, and Mechanical Knowledge
4. Problem solving
5. Memory
6. Grades.

On this premise, Cassady and Johnson (2002) developed a test anxiety questionnaire to measure the levels of anxiety among students. It was discovered that among students, are low, moderate and high levels of anxiety. The findings from their study indicated that students with low or high levels of anxiety recorded dismal scores on the test but students with moderate level of anxiety obtained high scores. This presupposed that some level of anxiety boost academic achievement whilst minute or heightened levels hinder academic achievement.

Researchers have adopted the test anxiety questionnaire in their study. In a study by Sweetnam, (2002) reported that students with high anxiety performs poorer in academics. Other scholar's findings supported the claim that low and high levels of anxiety inversely correlate with academic achievement DordiNejad et al. (2011). Recent study conducted by Roy (2013) and Khaledian, Amjadian and Pardegi (2013) which used the test anxiety questionnaire indicated that students who experience the extremes anxiety

thus, low and high anxiety performs poorer in academics. However, a study by, Cherry (2012) discovered that students who have moderate level of anxiety obtain high test scores. The researcher stated that moderate level of anxiety serves as a motivation to achieving excellence. It is therefore, expected that students in the Ekumfi District would register moderate level of anxiety on the anxiety scale so as to excel in all their future examination.

Conceptual Review of the Study

Meaning of Study Habits

Scholars have offered various definitions of study habits. Gudaganavar and Halayannavar (2014) indicated that study habits are the behaviour of an individual related to studies. Gudaganavar and Halayannavar explicate that study habits are the learner's habitual method of exercising and practising his abilities for learning. From the perspective of these scholars, study habit is not one short event but rather an act that should be practised overtime. To them, this behaviour should be performed consistently overtime to become part and parcel of the individual.

Gudaganavar and Halayannavar (2014) see study habits as behaviour that forms part of the psychological milestone of the individual which should and can be developed through conscious effort. It can be developed through deliberation and hard work coupled with consistent practice. Gudaganavar and Halayannavar further, stated that a student's study habits reveal his or her personality. The student's learning behaviour is seen in his study habits. Thus, study habits according to Gudaganavar and Halayannavar serve as a vehicle for learning and can be regarded as both a means and an end to learning. To this revelation, they concur that study habits play a crucial role in students

learning life. Each student's success or failure is determined by his study habits.

Ogbodo (2002) conceptualised study habit as learning that leads to the attainment of a learner's objective through a predetermined pattern of consistent behaviour. Comparing the perspective of Gudaganavar and Halayannavar (2014) and Ogbodo (2002), it could be observed that study habit is a behaviour that needs to be cultivated by the student and constantly practised as a daily routine to maximise the learner's academic success. From the viewpoint of these experts, it can be deduced that study habits are the behaviours used when preparing for a test or learning academic materials which span from reading, note-taking, concentration, being regular and punctual to class, rehearsal of academic materials, the use of time table, conducive environment and actively involving in a group study.

Moreover, according to Credé and Kuncel (2008), study habit is the degree to which the student engages in regular acts of studying that are characterised by appropriate studying routines occurring in an environment that is conducive to studying. From the definition of Credé and Kuncel, two things sterns out as a sign of good study habits. Firstly, there is a method for studying that is both appropriate and systematic. This implies that study habit is not a segregated episode but an activity that incorporate numerous patterns of activities that learners adopt in their studies. Thus, study habit is not a single episodic and isolated event but a practice that needs to be undertaken continuously and consistently with much effort and enthusiasm. Secondly, the learning is conducted in a conducive environment. Intuitively, it is clear that not all environments are suitable for studies. Therefore, developing good

study habits necessitate the identification of a conducive environment that supports learning.

However, Credé and Kuncel (2008), could not provide appropriate studying routines and favourable settings for good study habits. These scholars further indicated that, rehearsal of learnt material and self-questioning are constituent of the study habit. The experts contend that study habits require students' personal dedication to comprehend concepts, revise, and personally analyse one's competency in order to determine the extent to which subject matter has been consolidated. Additionally, Khurshid, Tanveer and Qasmi (2012) define study habits as a student's proclivity to employ his or her undivided attention to absorbing skills, productive attitude and knowledge through methodical routines.

Comparing the views of Khurshid et al. (2012) and Credé and Kuncel (2008), it is construed that these scholars endorse that study habits are a methodical process. There is, however, a point of divergence. Whiles Credé and Kuncel (2008), emphasise the importance of a conducive environment in study habits, Khurshid et al. (2012) indicated that constant attention or steadfast is essential in study habits. Despite their theoretical differences, these two components are practically linked. A favourable environment can support a high level of attentiveness, and vice versa.

Other scholars opined that the head, heart, and hands are crucial in study habit. In support of this assertion, Cardelle-Elawar and Nevin (2003) expound that a study habit is the intentional and deliberate use of one's cognitive skills, feelings, and behaviours to improve learning of knowledge and skills for a specific activity and set of circumstances. Cardelle-Elawar and

colleagues consider study habit to be the application of one's intelligence, emotions, and activities to the acquisition of knowledge and skills in order to complete a task.

Arieta, Gementiza and Saco (2017) highlighted that study habit plays a crucial role in the students' academic life. They alluded to the fact that each learner's success or failure is determined by his or her study habits. They further observed that the success of the learners is based on their ability, intelligence, and effort. This can be enhanced by adopting practices that are in congruence with the dictates of what constitutes a good study habit such as; completion of homework, active involvement in class, time management, attention, and hard working. Logically, effective study habit is based on strong intellectual abilities, stable emotions, and relevant activities that are purposefully designed to build knowledge and improve skills in order to achieve a goal.

Meaning of Test Anxiety

Extant literature has shown that the concept of test anxiety is a construct that is difficult to define with a single definition. This view is supported by Brown (2007) who indicated that, many researchers found that anxiety is still unclear and not easy to define concisely. However, researchers and other scholars have attempted to offer their definition of the concept. From the perspective of Yatendra and Pal (2013) test anxiety are compound of perceived physiological over-arousal feelings of worries and dread, self-deprecating worries, tension, and somatic manifestations that occur during test situations.

To Yatendra and Pal (2013), test anxiety is a physical phenomenon that is expressive. They are noticed by actions such as reluctance in undertaking a task, fear of failure, tension and procrastination. It can be inferred from the definition that, the test itself does not cause anxiety but it's consequences that emanate after taking the test. That is, the fear of failure and its consequences. In consonance with this definition, Asadullapoor, Fati and Gharaee (2010, p. 8) conceptualise test anxiety as "The subjective feeling of tension, apprehension, nervousness, and worry associated with an arousal of the automatic nervous system."

It is understood from Asadullapoor et al. (2010) definition that test anxiety is a personal expression of anxiousness or fear concerning an examination. This implies that the degree of fear varies from student to student depending on the nervous mechanisms of the student. Therefore, it is expected that some section of students may exhibit higher levels of test anxiety whiles others may possess moderate or low levels of anxiety. Due to this variation in the level of anxiety, its impact on the individual students as well as the outcome of the examination could differ among them.

Another scholar, Aydin (2017), views test anxiety as a distinct state of feeling characterised by dread that may or may not be connected with a discernible stimulus, often manifested as a biological stimulation that prepares the individual to respond to a possible threat to their safety. From the viewpoint of this expert, anxiety may not necessarily be caused by the test or a task to be undertaken but a stimulus that humanly related and triggers the individual to perform a responsibility capable of eliminating the perceived threat. Aydin further expounds that, if anxiety is not properly handled even

though it has some element of positivity, it has the potential to create social outburst in learners such as lack of confidence, worsening of sleep patterns, and a sense of failure.

Logically, anxiety in students is not wholly evil but if not tactfully controlled by a student it has the potential of causing mayhem in students' academic scores and success. Based on the above revelations by the scholars regarding learner's expression of anxiousness and fear associated with the outcome of examinations, test anxiety could be defined as an individual's expression of fear in relation to the outcome of examinations.

Concept of Academic Achievement

Academic achievement is a concept that has become difficult for scholars to agree on a single definition. As a result, different authors and scholars have offered varied definition for it. According to Kimberly (2009), academic achievement referred to student's approach to their studies as well as the completion of various duties their teachers assigned to them. He explained that academic achievement is the measure of the extent to which the learner has been able to assimilate the content of the concept taught. It was further added that academic achievement represents the realisation or fulfillment of a learner's academic potential through the accomplishment of all academic-related task.

Alkhalaf (2018) sees academic achievement as the product of education or the degree to which students, instructors and institutions have achieved their educational goal. He expatiated that academic achievement encompasses everything that the students acquire while under the umbrella of the school. These include the skills, attitudes, values, academic knowledge,

confidence, as well as Grade Point Average (GPA). To him, students' academic success is measured by their Grade Point Average (GPA) and test scores. Alkhalaf indicated that academic achievement does not hinge only on the students but also the teachers as well as the school the student attends.

Alkhalaf (2018) observed that teachers are the imparters of knowledge and how much students have achieved is measured based on the amount of knowledge and skills they have planted in their students. As a result, in determining the academic achievement of learners, the teacher factor plays a cardinal role. On the same vein, the school, its environment and the administrative structures cannot be undermined in discussing students' academic achievement right from teacher management, student management, teacher-student relationship, teacher and students supervision, teaching and learning coordination and any other activity that plays a significant role in educating the student. Logically, it could be deduced that every institution has an objective and for that matter teachers employed in the school become bind to the objective thus, building students with academic resilience. As a result, teachers and the institution helping students to achieve academic success achieve their objective.

Therefore, from the view point of Kimberly (2009) and Alkhalaf (2018), academic achievement is an individual's observable and measurable behaviours in a given setting. According to Nuthana and Yenagi (2009) academic achievement represents the cumulative knowledge and skills acquired by a student in various courses. They further alluded that the level of academic achievement is measured by tests, assignments and final examination results and is dependent on the standards put in place by the

educational institution. It could be said that academic achievement is the totality of knowledge and competencies a student has attained in the prescribed subject areas.

The definition from the above scholars also indicates that academic achievement is not subject-specific, but rather the aggregate performance in all courses. This explanation of academic achievement relates to the education system in Ghana where Senior High School Students are graded in aggregate scores in the compulsory subjects (English, Mathematics, Integrated Science, Social Studies) and any other two subjects. Besides, teachers conduct tests and give assignments to assess the level of academic achievement of students.

Otoo (2007) advanced that, academic achievement constitutes what a student is capable of achieving when he or she is tested on what has been taught. Otoo's (2007) delineation of academic achievement is similar to that of Nuthana and Yenagi (2009) that academic performance is evaluated through the test. Therefore, it is construed that the above educationists consider tests as critical processes through which students are judged to have acquired knowledge and skills as outlined in the curriculum. This perspective is upheld by Velasco (2007) that many available definitions of academic achievement rely on quantitative data and calculation like that of test scores and grades.

However, Otoo (2007) has pointed out that teaching determines the academic achievement of students, and it precedes testing. This study derives two conclusions from the viewpoint of Otoo (2007). Firstly, students are tested on what has been taught which makes academic performance an outcome of the experiences of students in the classroom encounter. This

observation presumes that students should not be tested on what they have not been taught. Secondly, the role of the teacher is vital in determining the academic achievement of students through teaching. Therefore, effective teaching results in a good performance, and poor teaching leads to dismal performance.

Aina and Olanipekun (2014) observed that academic achievement at both second cycle institutions is worrisome. They asserted that, the construct under discussion is influenced by threat factors such as economic, social and psychological factors. These factors have debilitating effects on students' academic achievements. However, according to Mlambo (2011) the influence could be student and country-specific thus, differ from one student to another and from country to another. Studies conducted by Aripin, Mahmood, Rohaizad, Yeop, and Anuar, (2008) on academic achievement of students revealed that gender differences, family educational history, socio-economic background, class environment, teaching and study habits as factors that have the potential of hindering student academic success.

Aripin, et al. (2008) theorised that, these factors are responsible for students' poor academic performance in schools. It is, therefore, critical to recognise that no matter how-well conceived a country's developmental plans may be, low academic attainment has the potential to derail everything. This, therefore, implies that low academic achievement and high failure rate are indicators of underdevelopment of a society. Daulta (2008) advanced the argument and indicated that academic achievement serves as a key criterion in judging students' true potentials and capabilities. Therefore, academic

performance reflects a student's aptitudes and worth in a chosen endeavour, and a system of identifying and selecting competent students for future tasks.

Across the globe, and Ghana to be specific, employers require those job seekers to present certificates and transcripts of results for consideration for employment. Tertiary institutions demand certificates and statement of results from prospective candidates for admission. Consistently, de Simone (2008) asserts that valuable insights are necessary for admission processes because "college admissions can be a high-stakes gamble" (p12). Therefore, information regarding academic achievement is essential in decision making. The above assertions suggest that students of good academic standing are judged as more competent than their peers with low achievement. Thus, determining the level of academic achievement could help sustain the performance of those who are high achievers, and implement strategies to enhance the performance of those struggling.

Empirical Review

Study Habits Practiced by Students

Researchers have investigated the study habit practised by students and according to Grace (2013), the most effective way of studying is by adopting and practising highly active behaviour over some time. The expert maintained that the high study behaviour comprises reading, drawing, comparing, memorising and testing over time. From the view point of Grace (2013), it could be construed that effective study habits encompass a series of activities that bring about learning in students. Husain (2000) opined that for a student to practice good study habits, he or she must combine all the parameters of good or effective study habits. The scholar maintained that good

study habits incorporate all the parameters or sub-concepts of study habits which include; study attitude, study methods and study skills.

Husain (2000) explained that study attitude is a mental and natural state of preparedness, that is organised by experience and has direct impact on the individual's response to all things and situations with which is related. Thus, the learner should intentionally psych the mind and tune it towards learning without coercion. He added that the study attitude has a great impact on student academic achievement and effective study patterns. Husain further elaborated that successful student's practice good attitude toward their studies and do no squander time or energy on what they have to do. Husain (2000) further indicated that if the learning experience is enjoyable, the student's behaviour and motivation are usually good, but if the learning experience is unpleasant, the student tends to avoid it.

A negative attitude towards study sometimes finds phrases in comment such as "I study but cannot recall what I study" or "the lessons are too long". Attitude is a measure of how we think and feel about people, things, and situations in our surroundings. It could be deduced from Husain's assertion that study attitude refers to the predispositions which students have developed towards private readings through a period. According to the scholar, study methods are the knowledge and application of effective study skills or techniques by students.

Kelli (2009) indicated that for students to be successful in their studies, they should be able to break it down, properly digest course content, reflect on it and be able to express the information in written and/or oral form. What is significant is the student's ability to develop good study habits. Many students

believe that the most important factor is the number of hours spent studying. However, students can learn for hours and at the end absorb and remember relatively little information. The appropriate question is, "How should students study more effectively?" It is therefore, critical to develop effective time management skills. Students must understand that there is a time for each academic activity, such as; a time to be in class, time for study, time for family interactions, time to socialise and time to just be alone. The important aspect is to recognise that there must be a proper balance between all these activities carried out at any given period and serious academic work.

According to Ashish (2013), it is critical for students to avoid negative study habits and acquire positive ones in order to attain academic achievement throughout their academic careers. Ashish further construed that adopting efficient study habits, regardless of age, academic ability or level, can make all the difference between performing excellently in a class, barely passing, and failing horribly. Even though, she agrees that most of the recent learning strategies can result in absolute disappointment despite best efforts and intention, she indicated that knowing exactly what does and does not work on a personal level, tracking study patterns and correlating it with related grades and then proactively creating a study plan and schedule around the proven effective methods, is the most powerful study tool of all.

In the view of Adeninyi (2011), learners who practice good study habits study independently at home and in any study area and aspire higher in their educational journey. He alluded to the fact that students who adopt good study habits at the secondary school level perform excellently well in their external examinations such as the West African Examinations Council

(WAEC), National Examinations Council (NECO) and the likes. Similarly, Monday (2008) and Bolling (2000) observed that, students who practice good study habits excel in class and achieve educational goals. They asserted that good study habits through deliberate and purposeful planning helps the students to prepare for any task ahead, and accomplish their academic goals. This assertion suggests that students who fail to adopt good study habits amass failure. Deductively, practicing good study habits leads to academic success and drastically lowers students' risk of academic struggle, remedial classes, lagging behind in their studies and eventually drops out of school.

Katelyn (2013) claim that, different people study in different ways and what works for one person may not work for another. Thus, an individual difference exists in all spheres of student's life including their study habits. Consistent with the revelation of Katelyn, John (2010) stated that no two students are the same. He indicated that even though differences exist among students and their adoption of study habits, some study habits are significant to all students' achievement. One such example is studying in a conducive environment. That is, a little bit of background music, such as classicals without lyrics is serene and a good learning environment. It was added that, whatever condition one studies, what is most crucial is to be consistent and stay on one plan.

Katelyn (2013) classified study habits into two. They are good and bad study habits. According to Katelyn, good study habits are usually referred to as productive or positive study habits. They are, as the name implies, those enjoyable study habits that have the potential to improve students' academic achievement or to produce positive outcomes. They are study habits that,

when adopted and practiced throughout a student's academic career, help them thrive in their studies. Good study habits develop as a result of practice and determining which approaches or methods work best for one as a student. It is fruitful to avoid distractions, such as the computer, television, mobile phone and loud sound that have the potential of diverting your attention.

Katelyn (2013) further stated that instead of procrastinating: (i) Stay focused and solve a long-term assignment daily, (ii) Study a bit each night instead of piling academic work, (iii) Revise what you learned in class every day when you get home, (iv) Before starting homework. Also, a good tip is to go over what you did in class the day before when you have a few minutes before the teacher begins teaching. Katelyn (2013), as a result, outlines fourteen positive or good study habits that students can adopt in order to improve their academic performance. They include:

1. Attending all classes
2. Reviewing your notes daily
3. Having at least one conference with the teacher
4. Attend help sessions when they are available
5. Attend learning resource labs when they are available
6. Reading material before it is covered in class
7. Developing and learning a word list for the subject
8. Reading materials to improve your background in the course
9. Studying daily
10. Go over old test questions (past questions if they are available)
11. Ask questions in class
12. Make a list of possible answers to the questions

13. Avoid a last-minute test

14. Have enough rest the night before exams.

In the same vein, Harper and Row (2009), supporting the revelations of Katelyn highlighted some ten other good study habits practices that according to them when students adhere to have the potential of improving their academic performance. These include; studying every day, creating a quiet place at home or elsewhere to study, turning off the phone, TV and other devices that may distract you while studying, listening to soft music or white noise, studying in a way that suits your learning style, taking regular breaks, studying early (don't wait until the last minutes), studying the hardest things first, spending more time on topics you find difficult, asking for help if one is struggling with his studies, and finally, taking notes as one studies as well as organising notes in a notebook.

However, according to John (2010) bad study habits are ineffective, inefficient, unproductive or negative and unpleasant study habits that are not desired and counter-productive to students' academic success. He contends that when these bad study habits are embraced and practised by students at all levels they tend to impede the academic progress and performance of the students. These bad study habits as identified by John (2010) include; procrastination, truancy, not taking note, selective reading, studying while watching television. Bad study habits, according to Nikki (2013), include studying with friends, listening to loud music, studying in uncomfortable conditions, and cramming.

From the foregoing discussion, it could be deduced that every student in school adopts and practice either good study habits or bad study habits.

This presupposes that the success or failure of a learner is dependent upon the chosen study habits. While good study habits lead to good academic achievement and future life prosperity, bad study habit causes failure, dismal academic performance and truncation of future academic pursuit.

Level of Test Anxiety among Students

Researchers and other scholars have investigated the level of test anxiety among students in different contexts. A study conducted by Ferdous (2012) established that students showed high levels of test anxiety. However, these studies noted that lower grade students exhibited a higher level of test anxiety than higher grade students. It is inferred from these studies that the class of students matter in determining their level of test anxiety. Deductively, this suggests that students at the Junior High School level would experience high test anxiety than those at Senior High school and the Universities. More also, those at the Senior High School would also experience higher test anxiety than those at the Universities.

Contradicting the findings of Ferdous (2012), other researchers are of the view that students at the higher grade levels experience higher test anxiety than those at the lower grades. For instance, a study conducted by Sansgiry, and Sail (2006) which examined test anxiety among pharmaceutical undergraduates at the University of Houston (Texas), reported that second-year students manifested a higher level of test anxiety as compared to students in the first year and other levels. Corroborating the earlier contradiction, Driscoll, Evans, Ramsey and Wheeler (2009) in their study noted that tertiary nursing students have approximately double the prevalence of moderately

high to high test anxiety compared to the general population and high school students.

Consistent with this assertion by Driscoll et al. (2009), it was indicated that learners at higher educational levels begin to experience test anxiety before being tested and even before testing dates are scheduled by Markman, Balik, Bercovitz, and Ehrenfeld, (2010). It is evidenced from the view points of the experts that, there is a contradiction as to which grade levels of students possess higher test anxiety. While other scholars are of the opinion that students at the lower grade are exposed to higher test anxiety other scholars support otherwise. The availability of these variations in test anxiety levels among students calls for study and a common consensus on which grade level experience what level of test anxiety.

Several studies have been conducted to investigate the levels of test anxiety of students. A study conducted by Dordinejad, Hakimi, Ashouri, Dehghani, Zeinali, and Daghighi (2011) reported that 35.0% of the students had moderate test anxiety while 20.7% possessed high test anxiety. Chapell, Blanding, Takahashi, Silverstein, Newman, Gubi, and Mccann (2005), also reported that the majority of students exhibit either a moderate or high level of test anxiety. It could be deduced from the viewpoints of these researchers that, test anxiety could be moderate or high. Therefore, learners could either experience moderate or high test anxiety. A consensus was also established between Nelson and Harwood (2011) and Cassady (2010) who agreed that between 25 and 40 percent of students experience test anxiety.

However, Nelson and Harwood (2011) and Cassady (2010) opined that students with disabilities experience have high rates of test anxiety. These

researchers explained that students who have test anxiety are easily distracted during examinations, making it difficult for them to grasp relatively simple instructions, as well as organise and recall essential information. In support of this study, Markman, Balik, Braunstein-Bercovitz, and Ehrenfeld (2010), construed that anxiety impairs learners' ability to take tests. Also, their capacity to demonstrate understanding of the content in the course being tested deteriorates, resulting in poor test performance, which has an impact on test scores and overall grades.

Apart from the anxiety levels identified by Dordinejad et al. (2011) and Chapell et al. (2005), Casbarro (2005), contend that anxiety in students is in three levels; low, moderate and high. He added that these levels are experienced by students who are prone to it irrespective of their grade level. This suggests that either you are at the basic, second cycle or university, you are susceptible to any of these levels. A study conducted by Asamoah (2018) on test anxiety instrument at the Department of Education and Psychology, University of Cape Coast reported that students who obtain a score of between 30 to 59 inclusive records a low test anxiety, from 60 to 89 indicates moderate test anxiety while a score from 90 and above shows high test anxiety.

However, for high academic achievement, low test anxiety is recommended. As indicated by Akanbi (2013), little bit of anxiety could be good since it serves as a motivator and can increase achievement by pushing the students to do their best. In cases where there is high test anxiety, the individual must see a professional counsellor. This is because too much anxiety can disturb the mental skills that students need to be successful on tests (Casbarro, 2005). Another research conducted by Cassady and Johnson

(2002) on the same concept posits that there are three levels of anxiety which are low, moderate and high.

The test anxiety instrument developed by these researchers indicated that a student who obtained a score of 27-61 inclusive is indicative of low anxiety; 62-71 represents moderate anxiety and from 72 and above is rated as having high anxiety. Cassady and Johnson (2002) enumerated some factors that cause anxiety which students need to take keen notice of. These are negative elf-esteem and criticism, poor motivation, lack of confidence and procrastination, poor prior testing performance, inadequate study habits and test-taking skills, unfavourable testing conditions or environment pressure from peers, family and teachers, and ineffective teaching techniques and methods.

Deriving from the study of Asamoah (2018) and Cassady and Johnson (2002), it is worth mentioning that, there is a consensus on levels of anxiety. They improved on the earlier ones identified by Dordinejad et al. (2011) and Chapell et al. (2005) by adding an extra level of anxiety which is low anxiety. From the foregoing reports, it is worth noting that the existence of low academic achievement should not be ascribe to students' intellectual issues or problems only but the testing conditions which produce anxious minds that serve as a factor of poor academic performance. Irrespective of the level and socio-cultural background, it is probable that students will experience some level of test anxiety. The evidence in literature appears to suggest that some level of test anxiety enhances academic performance among students. However, the debate still exists on the extent of anxiety that is needed to enhance performance which is subject to further inquiry

Relationship between Study Habits and Academic Achievement

Several scholars have established that study habits affect academic achievement. In a study by Bashir and Mattoo (2012), it was revealed that there is a relationship between study habits and academic achievement among students. The results of the study suggest that good study habits improve academic achievement whereas bad study habits inhibit achievement. In another study, Sarwar, Bashir, Khan, and Khan, (2009) concluded that overachievers possessed better study habits than underachievers. Similarly, other studies like Credé and Kuncel (2008) and Nuthana and Yenagi (2009) support the findings of earlier studies that study habits enhance the academic achievement of students. They further revealed that students who are better in reading and note-taking, well prepared for the test and have concentration may have better academic achievement.

A study by Arieta, Gementiza, and Saco (2017), observed that, study habits are extremely important in learners' life. The success or failure of each learner is determined by their study habits. The study also discovered that learning is an art and requires practice and effort. The success of each student depends on the ability, intelligence, and action of the students. Thus, good study habits can help a student to improve while bad study habits hinder students' academic achievement. According to the study by Fouche (2017), good study habits such as; timely completion of homework, active class participation, time management, staying concentrated, and working hard showed a significant positive correlation to their academic achievement. It was further mentioned that students need to adopt study habits because they are study strategies that are applied in learning.

According to Ebele and Olofu (2017), without developing study habits, students cannot perform and improve their academic achievement. Again, Rabia, Mubarak, Tallat, and Nasir (2017), in their study entitled "A Study on Study Habits and Academic Performance of Students," it was reported that there is a significant relationship between study habits and the academic performance of the students. This means that study habits improve academic achievement. Study habits have a positive impact on learners' academic achievement, according to a study conducted by Sikhwari (2016) to investigate the role of non-cognitive factors such as study skills, motivation, study habits, and attitudes on academic achievement. It could be said that, to be successful in academics one has to adopt a study habit that yields a good result. Thus, good study habit is a catalyst for academic achievement.

Moreover, a study carried by Looyeh, Fazelpour, Masoule, Chehrzad, and Leili (2017) to determine the connection between student's study habits and their academic success reported a positive association between the two variables. Looyed et al. indicated in their findings that good study habits boost students' academic achievement. They opined that the academic success of students is dependent upon their study habits. Based on the findings of these studies, it is obvious that study habits are major determinants of academic achievement of students.

Researchers have examined the impact of the individual components of Bakare's (1977) study habit inventory. On-time management, Aduke (2015) study finds that time management is a factor in improving students' academic achievement. His study found that procrastination, prioritisation, and planning were significant factors that influence students' academic

achievement in terms of time management. He explained that procrastination is an intended action that is voluntarily delayed, despite the expectation that it will fail to maximise one's utility. Aduke, further added that, when students eschew the attitude of procrastinating their study time and judiciously utilise it, prioritise and plan their study schedules effectively, maximum academic achievement is their prize. Thus, students who do not manage their time effectively face difficulties and register poor academic achievement.

Another study titled "The Effect of the Time Management Art on Academic Achievement among High School Students in Jordan," shows a significant relationship between time management and academic achievement (Al-Zoubi, 2016). The result of the study revealed that time management is an important ingredient that when incorporated into academic proprietaries elevate academic achievement. The researcher admonished students to pay much attention to their academic time to maximise their academic achievement. Similarly, a study by Khanam, Sahu, Rao, Kar, and Quazi (2017), construed that time management is one of the techniques that improve students' academic prospect. This study was conducted on medical students in Odisha on their time management and academic achievement. The study showed that the participants who had high percentage scores also had a high mean score on overall time management. This suggests that time management is an essential tool in improving one's academic performance.

Again, in a study by Osman and Mohamed, (2016) entitled "Time Management and Academic Performance: Empirical Survey from High Education in Mogadishu-Somalia," the purpose was to examine the relationship between time management and academic achievement. The result

of the investigation revealed that time management had a significant and positive impact on academic achievement at higher education level in Mogadishu, Somalia. They, therefore, noted that, time management is a magnificent factor in improving a student's academic success.

Congruence with the earlier assertion, on time allocation, Strauss and Volkwein (2002) found that learning for more hours positively related to academic achievement. The findings of these researchers suggest that it is not time allocated for study per se that improves performance, but rather the academic learning time that influences performance. Students in a school may have longer hours in school but achieve less if the time allocated is wasted whilst students in another school with fewer hours could perform better if instructional hours are prudently used for learning. This result implies that instructional time in public basic schools in Ghana should be used judiciously to maximise learning and lead to good performance.

On note-taking, Oladeni and Bimbo (2017) performed a study to investigate the correlation between secondary school students' study habits and academic achievement in mathematics. The result of the study indicated that note-taking has a remarkable association with student academic success in mathematics. This suggests that note-taking is a prerequisite in enhancing student's study habits and for that matter their academic achievement. They argue that note- taking is an important aspect of students learning. To them, when students write down the salient points during teaching or lecture, it automatically registers in their minds and can recall the content of it than not writing at all and just being a mere observer during the lesson delivery. Accordingly, the result of a study conducted by Kiewra, Benton and Lewis

(2007) confirmed that students who take notes score higher on tests than students who do not take notes. Therefore, students are expected to take-notes as part of their study habits which will eventually result in enhanced academic achievement.

Another component of Bakare's (1977) study habit inventory that has caught the attention of scholars is concentration. Kuncel (2008) and Nuthana and Yenagi (2009) study reveal that students who concentrate in class during teaching and learning excel in their exams and subsequently impact their academic achievement. Oladele (2000) stressed that students need to concentrate on their studies by choosing a serene place that can stimulate them to study. The study findings further reported that avoiding external distractions in the course of learning enables the learner to fully pay attention to every aspect of the material and content being studied. Assimilation and apprehension of concept become easy and hence performs well during the test and this improves the students' academic achievement.

The argument from Oladele (2000) presupposes that when students concentrate on their studies, they can apply themselves favourably to the learning assignment and reap the benefits through good academic achievement. Furthermore, homework/assignment practices have an influence on the academic achievement of students as proven in empirical studies done by previous researchers. For instance, an investigation by Minotti (2005) and Mushtag and Khan (2012) discovered that students who showed a positive attitude towards homework attained higher academic achievement than those who showed a lackadaisical attitude towards it. The expert theorised that homework provides students with the opportunity to revise what has been

learnt, thereby helping the student to internalise learnt material. This, in turn, ensures recollection when the need arises.

A study conducted by Afful-Broni and Hogrey (2010) suggested that assignment should be used as one of students' learning to improve their study habits and academic performance because assignment could make students understand more lessons in class due to practising to do questions, attempt to solve problems and paying attention on reading rather than no work assigned for them. Based on this result, it could be understood that assignment is a critical component of study habits that affects students' academic achievement.

Relationship between Test Anxiety and Academic Achievement

An investigation into whether or not anxiety impact academic achievement has been given much attention in recent years. A study by researchers into the two variables probably, suggests their significance in education and improvement of human endeavour. Scholars have contended that there is a significant association between test anxiety and academic achievement (Saeidi & Khaliliaqdam 2013). However, the nature, direction and magnitude of the association between the variables remain unattended.

According to Rafiq, Ghazal and Farooqi, (2007), 'it is natural to feel anxious when studying for a test or examination, however, too much of it can compromise students' academic achievement at school' (p27). They argue that a little bit of anxiety in human life is not evil as it rather prompts the culprit to be alert in carrying out the task ahead with all seriousness to avoid the consequences thereof. They however contend that, high level of anxiety such as 'high anxiety' can cause a debilitating effect on students' academic

achievement. Other studies have also indicated that a high level of test anxiety leads to poor academic achievement (Sweetnam, 2002; Cassady, 2001; Austin, Partridge, Bitner & Wadlington, 2014).

Sweetnam (2002) further construe that test anxiety "affects both high achievers and low achievers with similar results. Thus, test anxiety has no respect for class or category. It affects everybody irrespective of their grade. However, its effect on both higher achievers and lower achievers depends largely on the level of anxiety one is exposed to. That is high, moderate or low anxiety. According to a meta-analysis done by Seipp (2015), test anxiety and academic success are adversely linked. The researcher opined that students who experienced a low degree of test anxiety record higher test scores compared to those who have high levels of test anxiety. DordiNejad et al. (2011) discovered a negative relationship between test anxiety and students' grade point average (GPA). Similarly, recent studies by Khaledian, Amjadian and Pardegi (2013) and Roy (2013) also succour the fore coming submission that test anxiety and academic performance are inversely correlated. These scholars observed that students who have a high level of test anxiety perform poorly academically. In another study conducted to investigate the connection between test anxiety and academic achievement of learners showed an inverse relationship among the variables (Khoshnoidi, Rezael, Ahmadi, Khoshay, Rashiditabar and Kshan, 2014). This presupposed that test anxiety does not enhance academic achievement but rather hinders it.

Contradicting the findings of the earlier studies, Cherry (2012) theorised that test anxiety exists continuum: low, moderate, severe. The researcher contends that students who have moderate levels of test anxiety can

perform reasonably well on the test. Students with severe anxiety, on the other hand, experience panic attacks characterized by common physical symptoms such as headache, vomiting, stomach upset, fear, sweating, shortness of breath, crying, pacing or fidgeting, racing thoughts, and blanking out, all of which have a negative impact on their academic performance. Driscoll, Ramsey, and Wheeler (2009), explained that a moderate level of test anxiety is significant for better academic achievement, and the absence of anxiety ultimately results to poor academic achievement among learners. This finding lends credence to the assertion that some amount of test anxiety is not relevant to academic achievement.

However, a study by Oladipo and Ogungbamila (2013) reported that test anxiety has no substantial link with students' academic success. Again, Cheraghian, Fereidooni-Moghadam, Baraz-Pardjani and Bavarsad (2008) study also showed no significant relationship between test anxiety and academic achievement. To these scholars, test anxiety and academic achievement have no relationship. Both variables are on the opposite side of the coin having nothing to do with each other. The literature reviewed has demonstrated that there are contradicting results on the relationship between test anxiety and students' academic performance.

It is evidenced from the discussions that while the majority of the studies reported an inverse correlation between test anxiety and academic attainment among students, others are of the view that some level of test anxiety is crucial for desirable academic achievement. Thus, a moderate level of anxiety heightens the academic achievement of students. However, some researchers reported no relationship between test anxiety and academic

achievement. The existence of these contradictory findings calls for further studies to shed more lights on the linkage between test anxiety and academic achievement in specific settings.

Gender and Study Habits

Several researches have been carried out to investigate the connection between gender and study habits among students where contradicting findings have reported over the years on the above variables. A study conducted by Fazal, Hussain, Majoka, and Masood, (2012) revealed that girls outperform boys in terms of study habits. This is consistent with the findings of Ogoemeka (2013), who discovered that, when compared to females, male students pay less attention to their low academic grades and are more concerned with passing examinations. Similar studies conducted by experts to investigate the gender disparities in terms of their study habits indicated that females are better than males in adopting good study habits and as a result perform better academically than their male counterparts (Voyer & Voyer, 2014; Ayesha & Khurshid, 2013).

Deductively, it could be said that males do not adopt specific and unique study habits that have the potential of boosting their academic prospect but rather study anyhow. Ergene's (2011) study investigated gender disparities in terms of study habits and surmise that girls have better study habits than boys. Ossai (2012) came to the same conclusion, stating that girls have superior study habits than boys in general. To the view-point presented by the above researchers, girls pay much attention to their study habits and as a result adopt and practice good study habits that have a significant impact on their

academic achievement. They observed that boys have little time regarding their way of learning and adopt and practice any study habit.

On the contrary, Nouhi, Shakoori and Nakhei (2008), opinionated that male students have good study habits and abilities than females. Udeani's (2012) study findings also reported that boys outperform girls in most aspect of study habits. The findings from these studies suggest that boy rather possess better study habit and pay much attention to the way they study than their female counterpart. However, the findings of Awabil, Kolo, Bello, and Oliagbo's (2013) study revealed that gender had no impact on study habits. They contend that gender does not influence students' study habits. Thus, gender does not determine the adoption of study habit among students. Any of the sexes can choose particular study habits at any time whether good or bad. The student preference for particular study habits is not contingent upon one's gender but purely according to the learners' interest and what he or she thinks is the best within that moment which can do the magic by producing the ultimate and the desired result (Awabil et al., 2013). Similarly, Mushoriwa (2009) discovered no significant differences in the study habits of male and female students. He opined that both sexes practice either the same or different study habits. None portrays better or bad study habits than the other.

In a study entitled "Relationship between Study Habits and Secondary School Students' Academic Performance in Eti-Osa Local Government Area of Lagos State," the study found no substantial variation in the study habit scores between males and female students. This study, gender was not found to be a factor in the relationship between study habits and student academic achievement, but what is more important is the kind of study habits students

form (Onabamiro and Odunlami, 2017). The discussion presented by all the scholars, suggest that researchers differed in their findings regarding gender and students' study habits. As a result, research into these factors in other contexts, such as the Ekumfi District, is necessary.

Gender and Test Anxiety

Several studies have been carried out to investigate the correlation between gender and test anxiety. Studies conducted by Roy, 2013; Ergene, 2011; Soffer, 2008; Chapell et al., 2005 and Cassady and Johnson, 2002 to investigate the gender disparities in terms of test anxiety revealed that females experience higher level of test anxiety as compared to their male counterparts. It could be construed that females are prone to high intensity of test anxiety than males. However, some researches argue that probably, females are more exposed to anxiety because of their feminine characteristics such as being sensitive, kind, empathetic, adoring and considerate (Cassady & Johnson 2002).

According to them, these attributes of females naturally cause them to feel worried and anxious during the test. They further noted that men are inherently strong, resolute, aggressive leaders and shield their emotions. To the expert, these place men in the position of being able to control themselves and situations causing them to avoid being anxious during the test. Another study conducted by Núñez-Peña, Suárez-Pellicioni, and Bono, (2016) to examine gender differences on test anxiety and their impact on higher education students' academic achievement reported that female students experience higher levels of test anxiety than do their male peers.

Furthermore, research by Bandalos, Yates and Thorndike-Christ, (1995) on the same concepts reported similar findings. The study reveals that unlike males, female students experience a high level of test anxiety. Intuitively, it could be deduced from the revelations by the above researchers that females are at a higher risk when it comes to their disposition to anxiety. Consistent with these findings, in a study by Akanbi (2013) investigate the association between test anxiety levels of senior secondary school students across gender in Nigeria. A statistically significant difference was found between females and anxiety while the opposite was found in the case of males.

Akanbi (2013) and Bandalos, Yates and Thorndike-Christ (1995) therefore reported that female students possess a high level of anxiety than male students. However, the study did not pin point the specific level of anxiety possessed by the female student as identified by Casbarro (2005), as low, optimal and high. More also, the amount of difference of the anxiety possessed by the female students than their male counterpart was also not reported or how much less male students possess than the female students were not investigated by the study. This makes it difficult to quantify in specifics how much more or less anxiety each sex possesses than the other.

Study Habits and Test Anxiety as Predictors of Students' Achievement

Gaining the interest of researchers across the globe nowadays is whether or not the two concepts: study habits and test anxiety jointly influence students' academic achievement. As a result, a lot of studies have been conducted either to approve or disapprove of the assertion. A study by Akanbi, (2013) contend that good study habits coupled with a small amount of

anxiety could be good in that it acts as a motivation and can increase achievement by pushing the students to do their best. He further noted that too much anxiety can impede the mental abilities of the students, making it difficult for them to excel on examinations

Casbarro, (2005) maintained that students with a high level of test anxiety cannot concentrate on the test questions which in turn, trigger the poor academic achievement. It could be noted that test anxiety in academics is not bad but should be experienced in moderation. In light of this, Atasheneh and Izadi (2012) maintain that study habits and test anxiety has attested to be one of the significant and affective filters which relates to success and/or failure in learning. These experts contend that good study practice with a moderate level of anxiety promotes academic achievement.

Again, a study conducted by Shakeer (2014), to study the relationship and the effects of test anxiety on the academic achievements and learning patterns of students found a positive link between the two variables and academic achievement. It was discovered that students with a moderate level of anxiety and good practice of study habits acquire good academic scores. It was also reported in the study that, a student with either low or high anxiety obtained low academic scores. It was further observed that students with bad study habits coupled with low or high anxiety scored low grades. On the other hand, students with good study habits but with low and high anxiety scored average grades. It is evidenced from the report that even though good study habits enhance academic achievement, heightened or low anxiety can reduce achievement. It could be inferred that a moderate level of anxiety and good study habits is ultimate in boosting the academic prosperity of students.

Numan and Hasan (2017) researched the impact of research patterns on examination anxiety and academic performance. The study reported that students' study approaches have a substantial impact on test anxiety and academic success.

It was reported that students who adopt good study habits minimise their anxiety to a moderate level which severs as a catalyst in enhancing their academic achievement. However, it was noted that learners who practice bad study habits heighten their anxiety level which in effect hinders their propensity for enhanced academic achievement.

Learners who possessed low anxiety were also found to perform woefully because according to literature little bit of anxiety in academics is significant as it severs as a driving force for serious academic work considering the consequences of failure (Cassady, 2001). Logically, it could be construed that appropriate study habits in conjunction with average anxiety elevate student's achievement. The presence of the desired level of anxiety serves as a motivator that pushes the students into serious academic business which in turn produces the desired academic achievement.

Conceptual Framework

The conceptual framework for the study as in Figure 1 was developed based on the relationships among the study variables. There were three set of variables in the study: two independent variables, and one dependent variable. The study habits and test anxiety constitute the independent variable. Bakare (1977) framework of study habits inventory which served as the theoretical basis of the study. This was made up of time management, concentration, reading and note-taking, assignments/homework, and time allocation. Test

anxiety was contingent on Cassady and Johnson (2002), test anxiety questionnaire which measures levels of anxiety among student and their effect on academic achievement.

The dependent variable was the students' academic achievement, which included the four compulsory subjects: English Language, Mathematics, Integrated Science, and Social Studies. The overall performance of the students was determined by computing the average of these subjects using the SPSS compute function. The researcher sought to determine whether: study habits adopted and practiced by students' impact on their academic achievement, level of anxiety among students and its effect on their academic achievement, and finally ascertain whether study habits and test anxiety together impact students' academic achievement.

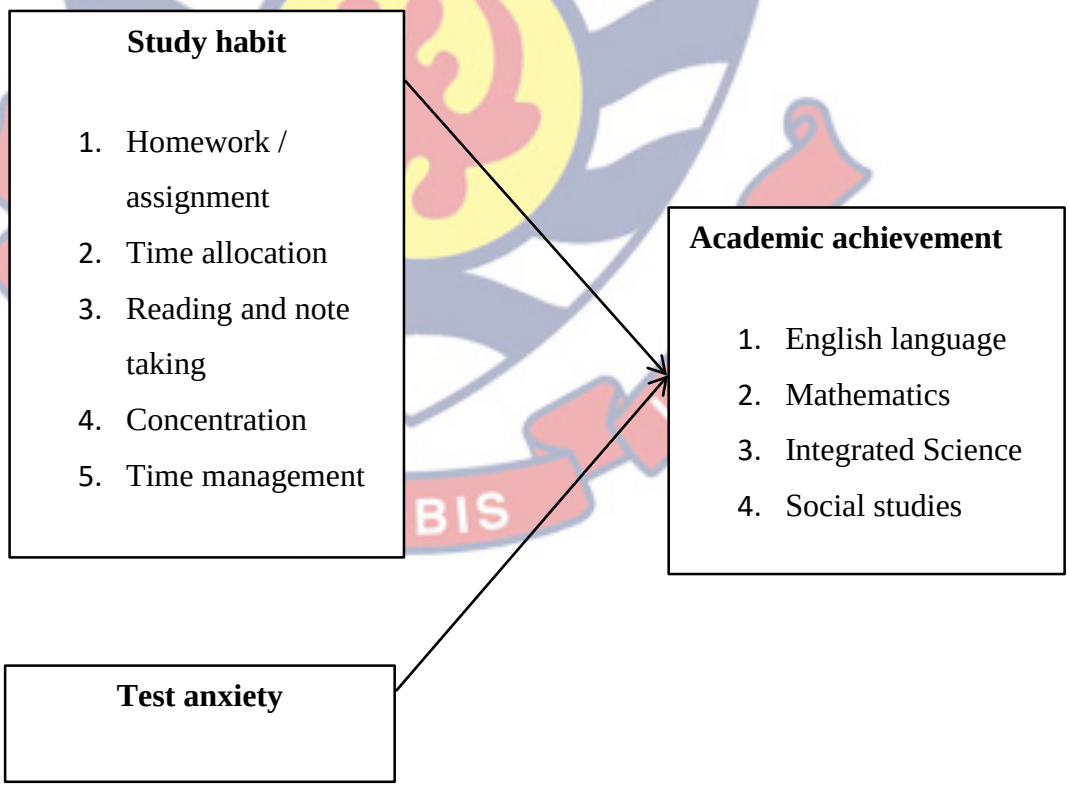

Figure 1: Conceptual Framework

Source: Author's own construct (2020)

Chapter Summary

This chapter reviewed relevant literature related to the study. The review was done thematically which comprised theoretical framework, conceptual review, empirical review, and conceptual framework. The literature was reviewed on the concept of study habits, test anxiety and academic achievement as detailed in the study. It also examined the Bakare (1977) Study Habits Theory and Cassady and Johnson (2002) Test Anxiety Theory. It was established that these theories have been used extensively by researchers in different context and produced contrasting results. Whilst some researchers discovered that study habits and test anxiety influenced academic achievement, others did not find any relationship among these variables. These contradicting findings require further studies to shed more light on the linkage among these factors. However, since the students adopt and practice different study habits and also experience different levels of test anxiety, it is imperative to determine which study habits and test anxiety enhances academic achievement in the Ekumfi District. The next chapter presents the methodology employed in the conduct of the study.

CHAPTER THREE

RESEARCH METHODS

This chapter presents the methodology of the study that was adopted in carrying out the study. It describes the research design, study area, population, sample and sampling procedure, data collection instruments, data collection procedure, and finally how data collected were analysed.

Research Design

A research design of a study refers to the overall plan for collecting and analysing data needed to find answers to the research questions including the specific data analysis techniques (Slavin, 2007). Gay, Mills and Airasian (2006) explained research design as the structure of the study. According to Amedahe (2002), research design is the researcher's overall plan for obtaining answers to the research questions or for testing the research hypotheses. It is thus, a plan or blueprint which specifies how data relating to a particular problem should be collected and analysed and spells out the basic strategies that the researcher adopt to develop information that is accurate and interpretable. Therefore, a research design is the master plan that determines the sources and processes involved in generating data, organising, analysing the data, and interpreting the results in order to provide answers to the research questions. A research design guides the researcher at every stage of the study.

This study adopted descriptive survey design. According to Gay, Bruening and Bruce (2000), descriptive research involves collecting data in order to test hypotheses or answer specific questions concerning the current status of the subject of the study. It determines and reports the way things are.

In their views, Amedahe and Asamoa-Gyimah (2015) indicated that, descriptive design is done to find out how people think or feel or to describe how they behave in a particular situation. Thus, descriptive design deals with what exists, such as determining the nature of prevailing conditions, practices, and attitudes. It involves identifying relationships among variables and describing those relationships. According to Aggarwal (2008), the descriptive design is used to collect data about current conditions or situations for the purpose of description and interpretation.

Scholars like Saunders, Lewis and Thornhill (2009) argue that the descriptive survey is versatile to collect quantitative and qualitative data, allow the collection of a large amount of data from a large population in a highly economical way and quickly. Additionally, surveys are useful instruments for describing characteristics of large sample population to generate quantitative or numerical data of participants' behaviours and perceptions that could later be statistically analysed (Fowler, 2002). However, the design has some shortfalls. Confidentiality is the primary weakness of descriptive research (Slavin, 2007).

According to Slavin (2007), respondents are often not truthful as they feel the need to tell the researcher what they think the researcher wants to hear and also participants may refuse to provide responses they view to be too personal. Another weakness of this design, according to (Slavin, 2007) is that it presents the possibility for error and subjectivity. However, this design was adopted despite its weaknesses because the study aimed at determining the nature of the situation as it exists at the time of the study. This study used a quantitative approach where quantifiable data were generated to determine the

relationship between study habits and test anxiety as correlate of students' academic achievement of SHS students in the Ekumfi District thereby justifies the selection of the descriptive survey.

Study Area

The Ekumfi District was notched out from the Mfantseman Municipal in 2012 by Legislative Instrument 2027, and located in the Central Region of Ghana with Essarkyir as its District capital. It shares borders to the West by Mfantseman Municipality, to the North by Ajumako-Enyan-Essiam District, to the East by Gomoa West District, and to the South by the Gulf of Guinea. It has a projected total population of 65,775 comprising 32,230 males and 33,545 females.

The main agricultural activity in the district is pineapple production. The district has a pineapple factory called "Ekumfi pineapple factory" with its product called "Eku fruit juice". It is the biggest and only pineapple factory in Ghana. Other agricultural products produced by the residents include cassava, maize, vegetables, and fruits. Fishing activities are also engaged by the people especially along the coastal areas. Salt mining is done on small scale at Suprodo and Narkwa. Trading takes place almost everywhere in the district, with Essuehyia serving as a major hub and involves agricultural products and other merchandise.

The people speak Fanti and celebrate annual paramouncy festival called "ayerye or Akwanbo". The festival is celebrated on community bases with different dates. Communities such as Ekumfi Akwakrom, Swedru, Ebuakwa, and Otuam celebrate theirs on first week of September of every year. Ekumfi Ekumpoano observes theirs on last Saturday of November

every year and Ekumfi Narkwa celebrates theirs on first Saturday of December every year. There are five Senior High Schools in the district: T.I Ahmadiyya SHS, J.E.A Mills SHS, Akyen SHS, Al Khulaf-Au SHS and Obama SHS.

Population

Population of a study refers to all the members of the real or hypothetical group of people, events or objects to which a researcher wishes to generalise the results of a research (Gall, Gall & Borge, 2007). Amedahe and Asamoa-Gyimah (2015) opined that, population is the aggregate of cases about which the researcher would like to make generalisation. This implies that research population is the entire group of elements, persons, events, cases that have certain characteristics that the researcher is interested in, and to which he intends to obtain data for the study.

In this study, the population comprised all the Senior High School students in the Ekumfi District totaling 3,579. This constitutes the population from all the five Secondary Schools in the District: T. I Ahmadiyya SHS (1,372), J.E.A. Mills SHS (823), AL Khulafau SHS (626), Akyen SHS (423) and Obama SHS (335). However, the accessible population comprised all the SHS 3 students in the district totaling 1,500. The accessible population from each school is showed on table 2.

Table 2: Accessible population from each school

School	Male	Female	Total
T.I SHS	524	382	906
J.E.A Mills SHS	111	155	266
Akyen SHS	22	29	51
Al Khulaf SHS	122	119	241
Obama SHS	18	18	36
Total	797	703	1500

Source: Designed by researcher, 2020.

The researcher believes that these students have been in the school for more than a year and possess the characteristics that are of interest in relation to the variables of the study and will provide accurate information on their study habits, test anxiety and their academic achievement. Therefore, the accessible population was 1500 students comprising males of 797 (53.1%) and female of 703 (46.9%).

Sample and Sampling Procedures

A sample is a subset of the population of interest that has been selected to participate in a study and is representative of the overall population that one desires to investigate (Polit & Beck, 2010). The sample of a study is therefore those who are chosen from the population to participate and actually produce data for the study. Therefore, a sample for a study constitutes all the persons or cases that have been chosen to participate in the study. A sample size of three hundred and six (306) students was selected for the study. This sample size is based on Asamoah-Gyimah and Duodu (2007)'s recommendation that a sample size of 10% to 30% of the target population is representative of the

target population in surveys. Also, based on sample size determination table by Krejcie and Morgan (as cited in Sarantakos, 2005). Therefore, 306 was used which represents 20.4% of the population (1,500).

Sampling refers to the process of taking portion of the population, making observation on this smaller group and then generalising the findings to the larger population (Dampson & Mensah, 2012). Sampling therefore, is the process of selecting the participants of the study so that any conclusions drawn on the sample describes the population. The study employed purposive sampling, proportionate stratified random sampling and simple random sampling techniques.

Purposive sampling was used to select all the five Senior High Schools in the District. This is because all the schools have form three students who possess characteristics that are of interest to the researcher. The stratified random sampling is a technique in which a heterogeneous population is first divided into a set of mutually exclusive or non-overlapping sub-populations or strata, and thereafter random samples are then selected from each stratum for a study (Popoola, 2011). The population was categorised into subgroups, and simple random sampling was used to ensure that all the members in each subgroup are proportionately represented in the sample. Nwankwo (2013) advocates for the use of stratified random sampling to ensure that every stratum (subgroup) is represented in the sample. Table 3 shows how samples were selected from subgroups of each school.

Table 3: Subgroups and sample selected from each school

School	Male	Female	Total	Percentage of total	sample size
T.I SHS	524 (57.8%)	382 (42.2%)	906	60.4%	185
J.E.A Mills SHS	111 (41.7%)	155 (58.3%)	266	17.7%	54
Akyen SHS	22 (44.1%)	29 (55.9%)	51	3.4%	11
Al Khulaf SHS	122 (50.8%)	119 (49.2)	241	16.1%	49
Obama SHS	18 (50%)	18 (50%)	36	2.4%	7
Total	797	703	1500	100%	306

Source: Designed by researcher, 2020.

The first step in carrying out stratified random sampling is to determine the sampling frame, which is the actual list of individuals who were included in the population (Nesbary, 2000). The sampling frame involved 797 males and 703 females. Proportional stratified sampling was used to select the participants from the schools based on gender composition in each school. For instance, in T.I. Ahemadiya SHS, there were 524 males representing 57.8% and 382 females representing 42.2% of the school population making a total of 906. This makes 60.4% to the accessible population of 1,500. The 60.4% was used to determine the number of samples to select from that school. Thus, 60.4/100× 306= 185 students. The number of males and females from that sample was determined by using their respective school percentage. Thus, 57.8/100×185 = 107 males and 42.2/100×185 = 78 females. This means that for T.I. Ahemadiya SHS, 107 males and 78 females were chosen to constitute

the sample for the study. The same process was used to select the sample from each school.

Finally, simple random sampling was used to select the sample from each school in terms of gender composition. This is to ensure that each member of the population has equal probability of being selected to be in the sample, and the sample is representative of the population (Amedahe and Asamoa-Gyimah 2015). The rest are shown on table 4.

Table 4: The final sample selected from each school

School	Male	Female	Total
T.I SHS	107	78	185
J.E.A Mills SHS	23	31	54
Akyen SHS	5	6	11
Al Khulaf-Au SHS	25	24	49
Obama SHS	3	4	7
Total	163	143	306

Source: Designed by researcher, 2020.

Data Collection Instrument

Data collection instruments are techniques or tools used to collect information in research or the procedures utilised to collect research data (Zikmund, 2003). This implies that data collection instruments are the means of eliciting the feelings, beliefs, experiences, perceptions, or attitudes of a sample in a study. According to Cooper and Schindler (2011) the choice of a data collection instrument is influenced by factors such as the nature of the problem and availability of time and money. Questionnaire was employed to gather data for the study. Scholars support the use of questionnaire as a

credible data collection instrument in research. For example, Adejimi, Oyediran and Ogunsanmi (2010) endorse the use of the questionnaire as probably the single most common research tool that is relatively well understood and has the advantages of simplicity, versatility and low cost. Based on the views of Polit and Beck (2010) that closed ended questionnaires reduce the burden of respondents providing their own answers, and facilitate quick collection of quantifiable data for statistical analysis, the researcher adopted closed-ended questionnaire in this study. The quantitative approach that the researcher employed for the study demanded the collection of measurable data that would help to determine the study habits, test anxiety and their relationship with students' academic achievement.

The Study Habits Inventory (SHI) by Bakare (1977) was adapted for the study. The adaptation of the questionnaire was in the form of rewording some items to make them understandable to the students. The Study Habits Inventory is a self-reporting inventory that allows individual students to describe the situations, habits, and conditions that influence their study time and subsequent performance on tests and examinations (Bakare, 1977). The inventory consists of 34 items which requires students to provide answers relating to reading and note-taking, time allocation, homework and assignments, concentration, and time management.

The questionnaire was made up of four sections. Section A focused on the background information of the participants such as sex, age, educational level, and parents' education level. Section B measured the variables as contained in the conceptual model and measured on a four-point Likert scale such that 1=Strongly Disagree, 2=Disagree, 3=Agree, and 4=Strongly Agree,

and all the items were positive statements. Sarantakos (1998) recommends the use of Likert scale because it has high level of validity and reliability, even if the scale has few items.

Moreover, section C was on test anxiety, questionnaire was adapted from Cassady and Johnson (2002) which contained twenty-seven (27) items. It is a 4-point Likert scale questionnaire such that 1=Not at all typical of me, 2=only somewhat typical of me, 3=Quite typical of me, and 4=Very typical of me. The questionnaire has nineteen (19) positive statement items and eight (8) negative statement items. The students were required to rate each question to reflect their anxiety level. Section D, which is the final part solicited information on students' academic achievement. This recorded the students raw marks obtained in their final district mock in the four core subjects namely; English Language, Integrated Science, Mathematics and Social Studies. These subjects were considered in the study because all the students study them irrespective of the schools unlike other subjects like French which is not studied in all schools.

Pilot Testing of the Instrument

Pilot testing of instruments refers to "A preliminary administering of instruments carried out before the full research, to test out data collection instruments and other procedures" (Gerrish & Lacey, 2006, p. 538). Bryman and Bell (2011) argue that it is always valuable to pilot test a questionnaire before administering to participants so as to eliminate ambiguities and errors in data collected, and to assess the validity and reliability of the instrument. Validity refers to the evidences to support the appropriateness or the soundness of the use and interpretation of data obtained from the respondents

Nitko (2004). This presupposes that the focus of validity is not on the instrument itself but on the interpretation and meaning of the data derived from the instrument (Ary, Jacobs & Razavieh, 2002).

To ascertain the content validity, the items for the instrument were shown to my supervisor and other senior members in the Department of Education and Psychology, University of Cape Coast. This was to examine: (1) Whether the items were related to the research questions; (2) Whether the items would elicit the appropriate responses from the respondents; (3) Whether the vocabulary structure was appropriate; (4) Whether the items were properly arranged; (5) If items fitted into sections they had been placed in; and (6) Whether any of the items were ambiguous and misleading. Their opinions and suggestions in these areas were used to improve the instrument and thereby helped to establish the face and content validity. This is in accordance with the assertion that validity of an instrument is determined through expert opinion (LoBiondo-Wood & Haber, 2010).

Reliability of an instrument is a measure of the degree to which the research instrument yields consistent results after repeated trials (Mugenda & Mugenda, 2009). Consistent with this, Asamoah-Gyimah, and Amedahe (2016) opined that the concept of reliability refers to the consistency of assessment scores over time on a population of individuals or groups. O'leary (2004) described reliability as related to internal consistency.

To achieve reliability, the questionnaire was administered to thirty-one (31) students who were randomly selected from two Senior High Schools in the Ajumako Enyan Esiam District namely: Mando SHS and Besease SHS. These schools were selected for the pilot test because their District shares

boundary with Ekumfi Disttrict and believed to possess similar characteristics such as boarding students, hostel students and day students as the study district. This decision was consistent with the assertion made by Kusi (2012) who stated that participants in a pilot test should have comparable features to those in the main study. The questionnaire was administered to participants in the pilot test schools once and the coefficient of the inter-item correlations was computed using Cronbach alpha to determine the reliability.

The reliability of the original instruments were: 0.89 for homework and assignments; 0.79 time allocation; 0.78 for reading and note-taking; 0.81 for concentration; 0.83 for time management; 0.85 and 0.897 for the entire questionnaire for study habits and test anxiety questionnaire respectively. The reliability results are presented in Table 5 and Table 6. On table 5, the Cronbach alpha coefficients for each of the variables were: homework and assignments= 0.798; time allocation= 0.780; reading and note-taking = 0.832; concentration =0.761; time management = 0.754; and the overall reliability for study habits were 0.76.

McMillan and Schumacher (2010) argue that Cronbach alpha coefficient should be at least 0.70 to be indicative of internal consistency. Therefore, the questionnaire for study habits was deemed reliable.

Table 5: Reliability result of the study habits instrument

Variables	Variable CA	Item	Item CA
Examination-related Study Habits	.780	SH1	.730
		SH2	.770
		SH3	.740
		SH4	.712
		SH5	.743
		SH6	.776
Homework and Assignments-related Study Habits	.798	SH7	.720
		SH8	.746
		SH9	.766
		SH10	.770
		SH11	.781
		SH12	.770
Reading and Note-Taking- related Study Habits	0.832	SH13	.782
		SH14	.733
		SH15	.793
		SH16	.767
		SH17	.786
		SH18	.784
		SH19	.792
		SH20	.788
		SH21	.798
		SH22	.767
Concentration-related Study Habits	0.761	SH23	.719
		SH24	.743
		SH25	.735
		SH26	.745
		SH27	.751
		SH28	.711
Time Management-related Study Habits	0.754	SH29	.725
		SH30	.742
		SH31	.733
		SH32	.729
		SH33	.739
Overall Study Habits CA	0.76		

Source: Field survey (2020)

Note: CA means Cronbach alpha and SH means study habits.

From table 6, the overall Cronbach alpha coefficients for test anxiety was 0.886.

Table 6: Reliability of test anxiety instrument

Variables	Variable CA	Item	Item CA
Test Anxiety	.886	TA1	.875
		TA2	.884
		TA3	.883
		TA4	.877
		TA5	.883
		TA6	.812
		TA7	.882
		TA8	.880
		TA9	.858
		TA10	.878
		TA11	.878
		TA12	.875
		TA13	.884
		TA14	.883
		TA15	.877
		TA16	.883
		TA17	.812
		TA18	.884
		TA19	.880
		TA20	.878
		TA21	.878
		TA22	.878
		TA23	.875
		TA24	.884
		TA25	.883
		TA26	.877
		TA27	.832

Source: Field survey (2020)

Note: CA means Cronbach alpha, TA1 means Test anxiety question one.

Data Collection Procedure

A letter of introduction was obtained from the Department of Education and Psychology, University of Cape Coast, to seek for permission from the headmasters of the five Senior High Schools in the Ekumfi District to conduct the study in their schools. The researcher introduced himself to the headmasters and the teachers regarding the purpose of his visit. With assistant from teachers from the various schools, all the participants were assembled in one classroom, the purpose of the study was explained to them, and how they would be involved. Having consented to take part in the study, the questionnaire was administered. The participants were asked to choose options to reflect their perception.

The researcher appealed to all the respondents to take their time to read, understand the questionnaire and respond to it appropriately. Their examination scores obtained during the District Mock in the four core subjects: English Language, Integrated Science Mathematics, and Social Studies were also recorded. This was done concurrently with questionnaire administration and with the support of the teachers. All the completed questionnaires were collected and sealed in an envelope. Two hundred and seventy-eight (278) questionnaires were used in the study representing a return rate of 91%.

Data Processing and Analysis

Data analysis is the process of examining the data collected in a survey, and making conclusions and interpretations from them (Kombo & Tromp, 2006). The researcher checked all the completed questionnaires, and those that were not appropriately responded to or poorly answered were

removed before the analysis in order not to distort the findings of the study. The items in the questionnaires were coded where numbers were assigned to the variables. For instance, gender was coded as male =1, female = 2. Age as below 15= 1, 15-17= 2, 18-19 = 3, and entered into the Statistical Product for Service Solutions (SPSS) software version 23.

The researcher explored the data to identify missing data, outliers and to familiarise with the data using descriptive statistics such as percentages and frequency. It was discovered that there were four missing data. One data each on items 33 'I feel sleepy and drowsy whenever I want to study' and 56 'I worry more about doing well on tests than I should' and two on academic achievement specifically on Social Studies were missing. The researcher retrieved the questionnaire of those respondents and corrected the errors. All the negative statements questions were reversed before entering into the SPSS Software. The output of the data exploration is show at appendix E.

According to Polit and Beck (2010) descriptive statistics enable a researcher to summarise, reduce, and describe quantitative data derived from empirical evidence. The descriptive statistics such as mean, standard deviation, percentages, and frequency were used to analyse the demographic information.

Research Question One

Research question one sought to find out from respondents the kind of study habits they adopt in their studies. The responses of participants were measured using statements and the activities were on a four-Likert scale as, 'Strongly disagree' (1), 'Disagree' (2), 'Agree' (3), and 'Strongly agree' (4). The overall score for each person and the overall mean were computed.

Moreover, descriptive statistics specifically, mean and standard deviation was used to analysed their response on the kind of study habits they practice. The test value used was 2.5. This average score mean value was used to determine whether a variable is rated below average, average or above average. The cut-off point was obtained by adding all the values of the four-point Likert scale, and divided it by 4 since the Likert scale has four scales. Thus (4+3+2+1) ÷4= 2.5.

Research Question Two

Research question two sought to find out from respondents the level of test anxiety they experience when taking test. The responses of participants were measured using statements and the activities were on a four-Likert scale as, 1= Not at all typical of me, 2= only somewhat typical of me, 3= Quite typical of me, and 4= Very typical of me. The overall score for each person and the overall mean were computed. Moreover, descriptive statistics specifically, mean and standard deviation was used to analysed their response on the level of test anxiety. The test value used was 2.5.

Research Question Three

Research question three sought to find out from respondents the relationship between their study habits and its impacts on their academic achievement. The responses of participants were measured using statements and the activities were on a four-Likert scale as, 'Strongly disagree' (1), 'Disagree' (2), 'Agree' (3), and 'Strongly agree' (4). The overall score for each person and the overall mean were computed. Moreover, to establish the relationship between their study habits and its impacts on their academic

achievement, Pearson Product Moment Correlation Coefficient was computed. The test value used was 2.5.

Research Question Four

Research question four sought to find out from respondents the relationship between their test anxiety and its impacts on their academic achievement. The responses of participants were measured using statements and the activities were on a four-Likert scale as, 1= Not at all typical of me, 2= only somewhat typical of me, 3= Quite typical of me, and 4= Very typical of me. The overall score for each person and the overall mean were computed. Moreover, Pearson Product Moment Correlation Coefficient was computed to establish the relationship between their test anxiety and its impacts on their academic achievement. Pearson Product Moment correlation was used to analysed research question four because according to Pallant, (2005) it is appropriate for determining the linear correlation between two variables. The test value used was 2.5.

Hypothesis One

H_0: There is no statistically significant difference in the study habits of males and females SHS students in the Ekumfi District.

H_1: There is a statistically significant difference in the study habits of male and female SHS students in the Ekumfi District.

Hypothesis one sought to test whether a significant difference exists between the study habits of the students in the Ekumfi District in terms of gender. The responses were tested using independent sample t-test.

Hypothesis Two

H_0: There is no statistically significant difference in the test anxiety of male and female SHS students in the Ekumfi District.

H_1: There is a statistically significant difference in the test anxiety of male and female SHS students in the Ekumfi District

Hypothesis two sought to test whether a significant difference exists between the test anxiety of the students in the Ekumfi District in terms of gender. The responses of the respondents were tested using independent sample t-test.

The choice for this inferential statistical tool for hypotheses one and two was informed by the assertion that independent-samples t-test is an appropriate statistical test when the scope of a research hypothesis is to assess if differences exist on a continuous dependent variable by a dichotomous grouping independent variable (Pagano, 2009). Thus, independent samples t-test is used to compare groups to determine if any significant differences exist.

Hypothesis Three

H_0: Study habits and test anxiety will not predict the academic achievement of SHS students in the Ekumfi District.

H_1: Study habits and test anxiety will predict the academic achievement of SHS students in the Ekumfi District.

Hypothesis three sought to test whether study habits and test anxiety will not predict academic achievement of SHS students in the Ekumfi District. The responses of the respondents were tested using multiple linear regression.

Test of Assumptions

Prior to data analysis, I checked the assumptions that underpin the use of parametric inferential statistic like the independent sample t-test and multiple linear regression. These assumptions included normality of data, homogeneity or equality of variance and multicollinearity.

Normality of data

According to Lund and Lund (2012), normality of data is a test used to determine if a data set is well-modeled by a normal distribution. The scholars indicated that there are two main ways of measuring normality: graphically and numerically. In this study, normality of data was evaluated graphically using Q-Q plot. If the data values are closed to the mean line of fit then the data is normally distributed. However, if the data values are far scattered or deviated from the mean line of fit then normality is violated (Lund and Lund 2012). It is evident from the output in the appendix J that most of the data value points are closed to the mean which are indication of normality of data.

Homogeneity of Variance

Homogeneity of variance, also known as equality of variance, requires that the variability of scores for each of the groups (males and females) is similar, and Levene's test is used to assess this assumption. Levene's test looks at whether there are any significant differences between group variances (Pallant, 2005). The author adds that this assumption is determined when the Levene statistic is greater than 0.05. Assessment of the Levene's statistic which accompanies t-test outputs in table 13 and 14 revealed that this assumption was satisfied.

Multicollinearity

Multicollinearity measures the degree to which the independent variables are interrelated (Pallant, 2005). To ensure that there is no multicollinearity between the independent variables (study habits and test anxiety), the Tolerance and Varance Inflation Factor (VIF) values were used. Field (2020) indicated that to ensure there is no multicollinearity between two predictor variables, the tolerance value should be greater than 0.1 while the variable inflation factor be less than 10. It is therefore evident from the output in table 17 that there is no multicollinearity between the predictor variables (study habits and test anxiety) used in the study.

Chapter Summary

The researcher adopted descriptive survey design for the study in order to find out the study habits practiced by Senior High School students, test anxiety and their correlate with the students' academic achievement. The study was carried out in the Ekumfi District in the Central Region of Ghana. The researcher used all the five Senior High Schools in the District. Sample size of 306 was obtained using purposive, stratified, and simple random sampling techniques. An instrument (questionnaire) was adapted by the researcher and was used to gather the necessary information needed for generalisation. The researcher trial-tested and validated the instrument before it was administered.

The data collected was analysed using descriptive statistics specifically, mean, standard deviation, percentages, and frequencies. Pearson Product Moment correlation, independent sample t-test and multiple linear

regression were also used in the data analysis. The next chapter presents the results of data analysis and the discussion of the findings.

CHAPTER FOUR

RESULTS AND DISCUSSION

This chapter presents the results and discussion of the analyses of data. The chapter is organised into five sub-sections. Section one presents a report on the response rate and a discussion on its appropriateness. This is followed by the demographic representations of the sample and a justification of their relevance to the study. The third section presents data and analyses of research questions, and test of the study's hypotheses is done in section four. The final section discusses the results of data analysis.

Out of a total of three hundred and six (306) questionnaires that were distributed to the respondents, two hundred and seventy-eight (278) were filled and returned, representing a response rate of 91%. This return rate was realised because fifteen (15) respondents did not fill in all the items in the questionnaire which resulted in numerous missing data. In addition, thirteen (13) questionnaires were not completed by the respondents. In all, twenty-eight (28) questionnaires were removed from the analysis in order not to distort the findings. However, this response rate was very good for the study based on the suggestion of Mugenda and Mugenda (2009) that a 50% response rate is adequate, 60% is good, and 70% or more is very good for a quantitative study.

Demographic Characteristics of the Respondent

This section of the study examined the demographic characteristics of the respondents. The distribution of the respondents was based on gender and age. The distribution of the sample based on gender is shown in Table 7.

Table 7: Distribution of the Respondents by Gender

		Frequency	Percentage (%)
Gender	Male	147	52.9
	Female	131	47.1
	Total	278	100.0

Source: Field survey (2020)

The result on Table 7 revealed that there are more males (n=147, 52.9%) than females (n= 131, 47.1) in the study. However, this composition of the sample reflected the characteristics of the population where there were more males than females.

Table 8: Distribution of the Respondents by Age

		Frequency	Percentage (%)
Age	15-17 years	34	12.2
	18-19 years	182	65.5
	20-21 years	54	19.4
	22 and above	8	2.9

Source: Field survey (2020)

The age composition of the respondents from Table 8 indicated that few respondents were within the age range of 15-17years (n=34, 12.2%), and more than half of the respondents were in 18-19 age bracket (n=182, 65.5%). However, fewer of the respondents were within the 22 and above age range (n=8, 2.9%) as compared to those who were within the age range of 20-21years (n=54, 19.4%). These findings imply that most of the students in the district got enrolled into the Senior High School within the required age of 16 years prescribed by Ghana Education Service.

However, there were others who were enrolled earlier probably because they started their basic school at very tender age which got them completed earlier than the required age. On the contrary, there were others who were admitted above the entry age-point perhaps they didn't start basic school early or due to other factors beyond their control. This suggests that there was different age group distribution involved in the study whose findings could be generalised to capture a wider age range of school-going population.

The demographic characteristics of the respondents were crucial in the study for two reasons. Firstly, the age difference reflects the differences in the age brackets of the respondents involved in the study. This helped to produce rich data for the study. Secondly, gender was vital in testing hypothesis one and two of the study.

Results

Research Question One

What study habits do SHS students in the Ekumfi District practice in their learning?

Research question one sought to find out from respondents the kind of study habits they adopt in their studies. The responses of participants were measured using items which were in four-point Likert scale as, 'Strongly disagree' (1), 'Disagree' (2), 'Agree' (3), and 'Strongly agree' (4). Table 9 presents the result of descriptive statistics specifically, mean and standard deviation. An average score of 2.5 was used to determine whether a variable is rated as below average, average or above average. The cut-off point was obtained by adding all the values of the four-point Likert scale, and divided it by 4 since the Likert scale has four scales. Thus (4+3+2+1) ÷4 = 2.5.

In determining the kind of study habits practiced by students in the Ekumfi District, the descriptive information presented on Table 9 revealed that generally, students adopted Time Management-related Study Habits (M =2.73, SD =0.484), and Reading and Note-Taking- related Study Habits (M =2.73, SD =0.381) most, followed by Concentration-related Study Habits (M =2.70, SD =0.496), Examination-related Study Habits (M = 2.59, SD=0.393), and the least practiced study habit was Homework and Assignments-related Study Habits(M =2.57, SD =0.422).

It is evident from table 9 that even though students in the Ekumfi District adopted some of the study habits than the others, they practiced all and each of the study habits is significant having average mark above the cut-off point of 2.5. That is, an average mean score of 2.5 or above is an indication of its practice by the students.

Table 9: Mean and Standard deviation of Students Study Habits

Study Habits	Mean	Std. Deviation
Reading and Note Taking- related Study Habits	2.73	0.381
Time Management-related Study Habits	2.73	0.484
Concentration-related Study Habits	2.70	0.496
Examination-related Study Habits	2.59	0.393
Homework and Assignments-related Study Habits	2.57	0.422

Source: Field survey, (2020)

Research Question Two

What is the level of test anxiety among SHS students in the Ekumfi District?

Research question two sought to examine the level of test anxiety among Students in the Ekumfi District. The determination of the anxiety level was adopted from Cassady and Johnson (2002) who suggested that there is low anxiety where the scores fall between 27-61, moderate anxiety with scores between 62-71, and high anxiety when the score is 72 or greater. The results of the analysis are presented in Table 10.

Table 10: Mean and Standard Deviation of Level of Students Test Anxiety

	N	Min.	Max.	Sum	Mean	Std. Deviation
Test Anxiety	278	61.00	121.00	22209.00	79.888	7.258

Source: Field survey, (2020)

The results in Table 10 revealed that generally there was high test anxiety among the students (M=79.888, SD=7.258). It is seen from the analysis that the students had high test anxiety since their mean score is greater than 71.

Research Question Three

What is the relationship between study habits and academic achievement among SHS students in the Ekumfi District?

Research question three sought to find out the relationship between study habits and academic achievement among the students. A bivariate linear correlation was conducted using Pearson Product Moment correlation, and the

results are presented in Table 11. The interpretation of the strength of correlation coefficients was based on the recommendation of Kothari (2004) that coefficients of 0.5 but less than 1 implies a strong relationship, coefficients greater than 0.3 but less than 0.5 indicates a moderate relationship, and coefficients less than 0.3 show a weak relationship. The correlation results were tested at 0.05 alpha level.

The Pearson Product Moment correlation results in Table 11 revealed a weak and negative relationship between overall study habit and overall academic achievement, but this relationship is not statistically significant ($r = -0.089$, $p > 0.05$, 2-tailed). This implies that the association between overall study habit and academic achievement is not a matter of great concern among Senior High School students in the Ekumfi District. However, a scrutiny of the individual indicators of study habits indicated that it was only concentration-related study habit that had a weak but statistically positive relationship with overall academic achievement ($r=0.165$, $p<0.05$, 2-tailed). Based on this finding, it was concluded that when the students' concentration level improves, their academic achievement is likely to increase, and when their concentration level reduces, their academic achievement is likely to decrease.

Table 11: Pearson Product Moment Correlation Matrix for Study Habits and Academic Achievement

	SH	M	SD	1	2	3	4	5	6	7	8	9	10	11
1	OST	2.665	0.277	1										
2	OAP	63.750	11.712	-.089	1									
				(.137)										
3	ERSH	2.590	0.393	.550*	-.023	1								
				(.000)	(.705)									
4	HRSH	2.567	0.422	.598*	.030	.278*	1							
				(.000)	(.619)	(.000)								
5	RNRSH	2.734	0.381	.673*	-.039	.194*	.330*	1						
				(.000)	(.5200	(.001)	(.000)							
6	CRSH	2.702	0.496	.650*	.165*	.143*	.158*	.304*	1					
				(.000)	(.006)	(.017)	(.008)	(.000)						
7	TMRSH	2.732	0.484	.698*	-.064	.221*	.193*	.381*	.342*	1				
				(.000)	(.290)	(.000)	(.001)	(.000)	(.000)					
8	Eng. Lang.	63.583	13.842	-.025	.788*	.004	.024	-.017	-.119*	.040	1			
				(.682)	(.000)	(.946)	(.685)	(.773)	(.048)	(.504)				
9	Math	55.072	15.413	-.080	.795*	-.027	.014	-.016	-.100	-.105	.457*	1		
				(.182)	(.000)	(.658)	(.816)	(.786)	(.097)	(.079)	(.000)			
10	Int. Sci.	64.453	15.129	-.077	.859*	-.020	.026	-.029	-.138*	-.063	.560*	.594*	1	
				(.200)	(.000)	(.743)	(.672)	(.635)	(.022)	(.294)	(.000)	(.000)		
11	Social Std	71.892	13.133	-.110	.815*	-.032	.035	-.068	-.188*	-.073	.574*	.496*	.624*	1
				(.068)	(.000)	(.599)	(.559)	(.260)	(.002)	(.224)	(.000)	(.000)	(.000)	

Source: Field survey, (2020) *Correlation is significant at p<0.05 (2-tailed) p values in parentheses

Note: SH= Study habits, OSH= Overall study habits, OAP=Overall academic performance, ERSH= Examination related study habits, HRSH=Homework related study habits, RNRSH=Reading and note-taking related study habits, CRSH= Concentration related study habits, TMRSH= Time management related study habits, Eng. Lang.= English Language, Math. = Mathematics, Int. Sci.= Integrated Science, social std.= Social Studies

Research Question Four

What is the relationship between test anxiety and academic achievement among SHS students in the Ekumfi District?

Research question four sought to find out the relationship between test anxiety and academic achievement as shown on Table 12.

Table 12: Mean, Standard Deviation and Pearson Product Moment Correlation of Test Anxiety and Academic Achievement

SN	Variables	M	SD	1	2	3	4	5	6
1	Test Anxiety	2.959	0.269	1					
2	Overall academic performance	63.750	11.712	-.073 .226	1				
3	English Language	63.583	13.842	-.075 .215	.788 .000	1			
4	Mathematics	55.072	15.413	-.354 .000	.795 .000	.457 .000	1		
5	Integrated Science	64.453	15.129	-.330 .000	.859 .000	.560 .000	.594 .000	1	
6	Social Studies	71.892	13.133	-.084 .165	.815 .000	.574 .000	.496 .000	.624 .000	1

Source: Field survey, (2020)

It was observed from Table 12 that there was a weak and negative relationship between test anxiety and overall academic achievement, but this relationship was not statistically significant (r=-0.073, p>0.05, 2-tailed). However, the findings showed that test anxiety had a moderate and statistically negative relationship with Mathematics achievement (r=-0.354,

p<0.05, 2-tailed) and Integrated Science achievement (r=-0.330, p<0.05, 2-tailed) respectively. Also, test anxiety had a weak and non-statistically negative relationship with English Language (r= -0.075, p>0.05) and Social Studies (r= -0.084, p>0.05). This suggests that when test anxiety increases, academic achievement in Mathematics and Integrated Science reduces.

Hypothesis One

H_0: There is no statistically significant difference in the study habits of males and females SHS students in the Ekumfi District.

H_1: There is a statistically significant difference in the study habits of male and female SHS students in the Ekumfi District.

The purpose of the hypothesis was to test whether a difference exists between the study habits of male and female students in the Ekumfi District. The responses were tested using independent sample t-test. The results are presented on Table 13.

It could be observed from Table 13 that generally on overall study habits, females practice good study habit (M=2.669. SD=.265) as compared to their male counterparts (M=2.662, SD=.288). However, at the 0.05 alpha level, there was no statistically significant difference in their study habits [t (276) =-.213, p=.831, 2-tailed]. Therefore, the null hypothesis which states that, there is no statistically significant difference in the study habits of male and female SHS students in the Ekumfi District was supported, whilst the alternative hypothesis was rejected.

Table 13: Independent Sample T-test for Gender and Study Habits

Variables	Gender	M	SD	Levene's Test for Equality of Variances		t-test for Equality of Means				
				F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
OSH	Male	2.662	0.288	.089	.766	-.213	276	.831	-.00711	.03334
	Female	2.669	0.265							
TARSH	Male	2.612	0.376	.397	.529	1.002	276	.317	.047	.047
	Female	2.565	0.412							
HRSH	Male	2.543	0.464	0.266	.498	-.983	276	.327	-.050	.051
	Female	2.593	0.368							
RNRSH	Male	2.754	0.381	.007	.935	.924	276	.356	.042	.046
	Female	2.711	0.381							
CRSH	Male	2.679	0.489	1.005	.317	-.814	276	.416	-.049	.060
	Female	2.728	0.505							
TMRSH	Male	2.720	0.514	1.927	.166	-.461	276	.645	-.027	.058
	Female	2.747	0.448							

Source: Field survey, (2020)

Note: OSH= Overall study habits, TARSH= Time allocation related study habits, HRSH=Homework related study habits, RNRSH=Reading and note-taking related study habits, CRSH= Concentration related study habits, TMRSH= Time management related study habits

Comparing gender differences on each component of the study habit inventory revealed that females practiced most of the study habits inventory higher than the males. On homework and assignments-related study habits, females practiced it higher (M=2.593, SD=.368) than males (M=2.543, SD=.464), but this difference is not statistically significant [t (276) =-0.983 p=0.327, 2-tailed]. The same was found on concentration-related study habits, where females register higher performance (M=2.728, SD=.505) than males (M=2.679, SD=.489). This difference is not statistically significant [t (276) =-0.814, p=0.416, 2-tailed]. In relation to time management-related study habits, findings revealed that females recorded higher mean score (M=2.747, SD=.448) than their males counterparts (M=2.720, SD=.514) but this difference is not statistically significant [t (276) =-0.461 p=0.645, 2-tailed].

However, males practice time allocation-related study habits higher (M=2.612, SD=.376) than females (M=2.565, SD=.412) but this difference is not statistically significant [t (276) =1.002, p=0.317, 2-tailed]. Also, the analysis revealed that males practiced reading and note-taking- related study habits higher (M=2.754, SD=.381) than their colleague females (M=2.711, SD=2.711, SD=.381). This difference is not statistically significant [t (276) =0.935, p=356, 2-tailed]. It is therefore inferred that even though both sexes exhibited slightly higher study habits behaviours on some of the study habits inventories than their peers, I conclude that both males and females practiced similar study habits to their learning task.

Hypothesis Two

H_0: There is no statistically significant difference in the test anxiety of male and female SHS students in the Ekumfi District.

H_1: There is a statistically significant difference in the test anxiety of male and female SHS students in the Ekumfi District.

The purpose of the hypothesis was to test whether difference exists between the test anxiety of male and female students in the Ekumfi District. The responses were tested using independent sample t-test. The results are presented on Table14.

Table 14: Independent Sample T-test for Test Anxiety based on Gender

				Levene's Test for Equality of Variances		t-test for Equality of Means				
		M	SD	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	η^2
Test Anxiety	Male	2.928	.256	.256	.897	-2.041	276	.042	-.066	0.015
	Female	2.993	.279	.279						

Source: Field survey, (2020)

It could be observed from Table 14 that generally females experienced more test anxiety (M=2.993 SD=.279) as compared to their male counterparts (M=2.928, SD=.256). The findings pointed out that the difference in test anxiety between the male and female students was statistically significant [t (276) = -2.041, p=.042, 2-tailed] at 0.05 alpha level. Therefore, the null hypothesis which states that, there is no statistically significant difference in the test anxiety of male and female SHS students in the Ekumfi District was rejected, whilst the alternative hypothesis was supported.

Having discovered statistically significant difference in the test anxiety of males and females, I proceeded to find the effect size using eta squared (η^2) through the formula: eta squared = $\frac{t^2}{t^2+(N_1+N_2-2)}$

$$= \frac{(-2.041)^2}{(-2.041)^2+276}$$

$$=0.015$$

The result of the eta squared showed that the effect size (0.015) was small based on Cohen's (1988) criteria which stated that an effect size of 0- 0.06 is small, 0.061-0.14 is moderate and greater that 0.14 is large.

Hypothesis Three

H_0: Study habits and test anxiety will not predict the academic achievement of SHS students in the Ekumfi District.

H_1: Study habits and test anxiety will predict the academic achievement of SHS students in the Ekumfi District.

Hypothesis three sought to test whether study habits and test anxiety will not predict academic achievement of SHS students in the Ekumfi District. The responses of the respondents were tested using multiple linear regression, and the findings are found in Table 15.

Table 15: Model Summary of Test Anxiety and Study Habits as Predictors of Academic Achievement

				Std.	Change Statistics				
Model	R	R Square	Adjusted R Square	Error of the Estimate	R Square Change	F Change	df 1	df2	Sig. F Change
1	.180[a]	.032	.011	11.647	.032	1.514	6	271	.174

a. Predictors: (Constant), Test Anxiety, Reading and Note-Taking- related Study Habits, Time Allocation-related Study Habits, Concentration-related Study Habits, Homework and Assignments-related Study Habits, Time Management-related Study Habits

b. Dependent Variable: Overall academic performance

The findings in Table 15 showed that the R^2 is 0.032, and the adjusted R^2 is 0.011. This implies that study habits and test anxiety collectively predicted 1.1% in the students' academic achievement. However, the findings in Table 16 indicated that the collective prediction of study habits and test anxiety was not statistically significant. Hence, the null hypothesis was supported while the alternative hypothesis was rejected.

Table 16: ANOVA Results of Regression Analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1232.261	6	205.377	1.514	.174[b]
	Residual	36760.989	271	135.649		
	Total	37993.250	277			

a. Dependent Variable: Overall academic performance

b. Predictors: (Constant), Test Anxiety, Reading and Note-Taking- related Study Habits, Examination-related Study Habits, Concentration-related Study Habits, Homework and Assignments-related Study Habits, Time Management-related Study Habits

The researcher proceeded to ascertain each predictor's contribution to the academic achievement and the outcomes are presented in Table 17.

Table 17: Standardized and Unstandardized Coefficients of Predictors of Academic Achievement

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	75.958	9.193		8.262	.000					
	TARSH	-.204	1.906	-.007	-.107	.915	-.023	-.007	-.006	.872	1.147
	HRSH	1.834	1.814	.066	1.011	.313	.030	.061	.060	.837	1.194
	RNRSH	-.002	2.108	.000	-.001	.999	-.039	.000	.000	.759	1.317
	CRSH	3.792	1.555	.161	2.439	.015	.165	.147	.146	.822	1.216
	TMRSH	-.281	1.644	-.012	-.171	.865	-.064	-.010	-.010	.775	1.291
	Test Anxiety	-1.814	2.745	-.042	-.661	.509	-.073	-.040	-.039	.899	1.112

a. Dependent Variable: Overall academic performance

Note: ERSH= Time Allocation related study habits, HRSH=Homework related study habits, RNRSH=Reading and note-taking related study habits, CRSH= Concentration related study habits, TMRSH= Time management related study habits,

The multiple linear regression analysis in Table 17 showed that except concentration-related study habits which individually predicted statistically significantly to academic achievement (β=0.161, t=2.439, $p<0.05$), the prediction of the rest of the independent variables did not reach statistical significance. Based on this finding, it was evident that concentration-related study habit is only significant predictor of academic achievement among the study habits inventory outlined in the study.

Discussion

Research Question One

Research question one investigated the kind of study habits students in the Ekumfi District adopt in their studies.

The study habits were in relation to time allocation, concentration, homework/assignments, reading and note-taking, and time management. The findings in Table 9 revealed that the students practiced time management and reading and note-taking equally, followed by concentration and examination related study habits respectively, while homework and assignments-related study habits is the least practiced study habit among the students.

This result indicates that the study habits of the students involved activities that would lead to effective and efficient management and prudent use of their study time whilst homework and assignment was given the least attention. However, the results discovered that the students practiced a mix of all the study habits domains most of the time where all the factors performed above an average of 2.5 on the 4-point Likert scale. Therefore, the students were diligent in the application of study habits in their studies.

The finding of the study is consistent with Xienono's (2012) outcome where he observed that students practice a combination of several study habits. Xienono's (2012) study findings affirmed the findings of this study that students in their study period do not stuck to only one study method but practice different study habits during learning. This reflects the assertion of Husain (2000) who indicated that for a student to practice good study habits, he/she must combine all the parameters of good or effective study habits which include time management, reading and note-taking, concentration, homework and assignment, examination related activities.

It could be seen that there is an agreement in the findings of this current study and the opinion of Husain (2000) who maintained that students do not practice single study habit but a blend of others. According to Kelli

(2009), in order for students to be successful in their studies, they should be able to properly assimilate course content, break it down, reflect on it, and articulate the information in written and/or oral form. He indicated that to effectively achieve this, it requires different study skills which are the study habits inventory.

This is evident among students in the Ekumfi District and Ghana at large where students in our schools are given homework as an extra school learning activity which is taken home for continuous learning. Students at all levels write notes and read later in order to augment learning. Also, time management is a key component of Ghana's educational system where every activity of the school is well planned and predetermined at each point in time. Students on their own have personal time table that serve as a guide towards their learning. It is concluded that students in the Ekumfi District practice different study habits.

Research Question Two

The second research question investigated the level of test anxiety among students in the Ekumfi District. The result showed that generally, the students experience high level of test anxiety (M=79.888, SD=7.258). This resonates with the observation of Cassady and Johnson (2002) that students experience high anxiety if they obtain average score of 72 and above.

Research Question Three

The third research question stated was to find out from the respondents the relationship between study habits and academic achievement. The findings of the study disclosed that there is no connection between students overall study habits and academic achievement. Thus, in the Ekumfi District,

composite of their study habits does not contribute significantly to their academic prowess. Their overall study habit is not a determinant of academic success.

However, the findings revealed that concentration plays a significant role in students' academic achievement. For students to be successful, they need to pay attention to their concentration level in all their academic endeavours. This is needed during teaching and learning, personal study periods and during group discussions. The findings of this current study is consistent with the findings of the study conducted by Credé and Kuncel (2008) and Nuthana and Yenagi (2009) that for students to improve their academic achievement, they need to give priority to concentration during academic activities such during teaching and learning, individual study moments, discussion sessions and co-curricular activities.

Credé and Kuncel (2008) and Nuthana and Yenagi further indicated that concentration is paramount as it helps one to grasp everything that happens in one's environment. They added that, concentration is energizer to t one's intellectual faculty. It provides energy to the mind to expand its horizons in capturing every material that come into contact. It could be opinionated that being attentive is a vital component in academic achievement. It enables learners to thoroughly assimilate the content of every learning material they come into contact with and also to excel academically.

Credé and Kuncel (2008) and Nuthana and Yenagi (2009) study again revealed that students who concentrate in class during teaching and learning excel in their exams and subsequently impact their academic achievement. Oladele (2000) stressed that students need to concentrate on their studies by

choosing a serene place that can stimulate them to study. The study findings further reported that avoiding external distractions in the course of learning enables the learner to fully pay attention to every aspect of the material and content being studied. Assimilation and comprehension of concept become easy and hence performs well during the test and this improves the students' academic achievement. This presupposes that when students concentrate on their studies, they can apply themselves favourably to the learning assignment and reap the benefits through good academic achievement.

Likewise, a study by Fouche (2017) indicated that, good study habit like staying focused (concentration) showed a significant positive correlation to their academic achievement. It was observed by this expert that when concentration is enhanced, academic achievement improves and when concentration is minimized, academic achievement deteriorate. It is therefore, concluded that to achieve academic excellence, concentration need not to be compromised as is a strong determinant of academic achievement.

Research Question Four

Research question four examined the relationship between test anxiety and academic achievement of the students. The findings of the study revealed that there was a weak and negative relationship between test anxiety and overall academic achievement, but this relationship was not statistically significant ($r=-0.073$, $p>0.05$, 2-tailed). This implies that test anxiety does not significantly predict academic achievement. Thus, whether or not test anxiety increases, it does not impact on the students' academic achievement.

However, it was discovered that test anxiety had a moderate and statistically negative relationship with Mathematics achievement ($r=-0.354$,

p<0.05, 2-tailed) and Integrated Science achievement (r=-0.330, p<0.05, 2-tailed) respectively. This means that as test anxiety increases, academic achievement in Mathematics and Integrated Science reduces and as test anxiety reduces academic achievement in Mathematics and Integrated Science increases. The findings further indicated a moderate relationship between test anxiety and academic achievement in Mathematics and Integrated Science.

This presupposes that test anxiety contributes to students' academic achievement in those two subjects. These findings agree with the findings of a study conducted by Cherry (2012) that students who have moderate level of test anxiety perform reasonably well on the test. The expert indicated that the presence of the moderate level of anxiety serves as energizer that propels the individual into excellence. It serves as a motivator that enhances the learners' desire in learning hard in achieving the ultimate performance.

According to the study findings of Driscoll et al. (2009), a moderate level of test anxiety is required for better academic achievement, and the absence of anxiety leads to poor academic achievement among students. This finding suggests that students are likely to perform better in Mathematics and Integrated Science since moderate level of anxiety was found between test anxiety and those two subjects. This is because the presence of the moderate anxiety would serve as a catalyst that would push them into high achievement.

On the contrary, the students are most likely to do worse as no relationship was found between English Language and Social Studies. This according to the findings of a study conducted by Sweetnam (2002) and Cassady (2001) that students who experience no or low anxiety performs bad

on their academic achievement as they seem to lack the motivation and desire to push them to study hard.

Hypothesis One

Hypothesis one discovered that there was no statistically significant difference between the study habits of males and females in the Ekumfi District. This implies that both sexes practice same or similar study habit. There is no difference in the patterns and study styles of both males and females in the District. The findings of this study is consistent with the findings of the study conducted by Mushoriwa (2009) which observed no significant differences in male and female students' study habits. It was discovered that none practice study habits better than the other. This became clear when exploring gender difference and the practice of individual study habit. It was revealed that, female students practice homework and assignments-related study habits, concentration-related study habits, and time management-related study habits better than males. However, males practice examination-related study habits and reading and note-taking- related study habits better their female counterparts. Even though these disparities exist among the student, their difference is not significant [t (276) =-.213, p=.831, 2-tailed] at 0.05 alpha level. According to Mushoriwa (2009) gender is not a determinant in the adoption of a good or bad study habits.

Similarly, it was reported in findings of a study conducted by Awabil, Kolo, Bello, and Oliagbo's (2013) that, gender had no impact on study habits. They argue that gender does not influence students' study habits. Gender does not determine the adoption of study habit among students. Moreover, in a study entitled "Relationship between Study Habits and Secondary School

Students' Academic Performance in Eti-Osa Local Government Area of Lagos State," the study found no substantial variation in the study habit score between males and female students. This study found that gender is not a factor in the relationship between study habits and student academic success, but what is more important is the kind of study habits students form (Onabamiro and Odunlami, 2017).

Any of the sexes can choose particular study habits at any time whether good or bad. The student preference for particular study habits is not contingent upon one's gender but purely according to the learners' interest and what he/she thinks is the best within that moment which can do the magic by producing the ultimate and the desired result. It could be deduced from the findings of this study that, there is no disparities in the adoption or practice of a study habits of the students in the Ekumfi District.

The students practice same or similar study habits, suggesting that they may all either practice good or bad study habits depending on what prevail at a particular point in time. Parents, teachers, managers of educational institution and stakeholder are to take proactive decisions to ensure that students under their care practice productive study habits since all the students are likely to adopt same act. It should be noted that any strange study habits is most likely to be imitated by all sexes. The students should be encouraged to practice study habits that has the tendency of positively impacting on their academic prospect.

Hypothesis Two

Hypothesis two revealed that there was statistically significant difference between the test anxiety of males and females in the Ekumfi

District. The findings indicate that there is a difference in the test anxiety of males and females and this difference is statistically significant [t (276) = -2.041, p=.042, 2-tailed] at 0.05 alpha level. It became apparent that females experienced high anxiety than their male counterparts. However, the actual difference between them was huge

This finding is in agreement with the findings of an investigation by (Roy, 2013; Ergene, 2011; Soffer, 2008; Chapell et al., 2005 and Cassady and Johnson, 2002). They concur that females experience higher level of test anxiety as compared to their male counterparts. According to these scholars, the difference could be attributed to their feminine characteristics such as being sensitive, kind, empathetic, adoring and considerate. They further opined that males are inherently strong, resolute, aggressive leaders and shield their emotions.

Moreover, a study conducted by Núñez-Peña, Suárez-Pellicioni, and Bono (2016) to examine gender differences on test anxiety and their impact on higher education students' academic achievement reported that female students experience higher levels of test anxiety than their male peers. The same findings were reported in a study conducted Akanbi (2013). It is therefore, construed that female Senior High students in the Ekumfi District experience higher test anxiety than males.

Hypothesis Three

Hypothesis three sought to test whether study habits and test anxiety will not predict academic achievement of Senior High School students in the Ekumfi District.

The findings revealed that study habits and test anxiety collectively predicted 1.1% in the students' academic achievement. However, their collective prediction is not statistically significant [F (6, 271) =1.514, p>0.000)]. This finding implies that the combination of study habit and test anxiety would not contribute to students' academic achievement. This suggests that students' adoption of a particular study habits coupled with an anxiety would not influence academic achievement.

This finding disagrees with Atasheneh and Izadi (2012) who maintain that study habits and test anxiety have attested to be one of the significant and effective filters which relates to success. Further exploration of the individual study habits showed that with the exception of concentration-related study habits which individually predicted statistically significantly to academic achievement (β=0.161, t=2.439, $p<0.05$), the prediction of the rest of the independent variables did not reach statistical significance.

This suggests that in Ekumfi District, it is only concentration-related study habits among study habits inventories in the study that predict academic achievement. This implies that, even though the general study habits of the students did not matter in enhancing academic achievement, concentration related study habit is critical in improving academic achievement of the students. Therefore, stake holders in education including teachers, head of institutions and parents are required to focus on the concentration related study habits of the students if they desire to enhance the academic achievements of the students.

Chapter Summary

This chapter presented the results and discussion of the analyses of data. Data were analysed to provide answers to four research questions and three hypotheses. It was discovered that the students practiced a mix of all the study habits domains. On anxiety, the study findings revealed that the students experienced high level of anxiety and this has the tendency of thwarting their academic achievement. Research question three revealed that, concentration plays a significant role in students' academic achievement.

The last research question showed that even though there is a weak and negative relationship between test anxiety and overall academic achievement, it moderately affects students' academic achievement on Mathematics and Integrated Science. It was disclosed that as test anxiety increases, academic achievement in Mathematics and Integrated Science reduces and as test anxiety reduces academic achievement in Mathematics and Integrated Science increases.

Under hypothesis one, the independent sample T-test revealed that there was no statistically significant difference between the study habits of males and females in the Ekumfi District. This means that both sexes practice same or similar study habit. Hypothesis two revealed that statistically significant difference exists between gender and test anxiety. The findings showed that females experience high anxiety than males. Also, hypothesis three pointed out that, study habits and test anxiety collectively predicted students' academic achievement. However, the collective prediction was not statistically significant. The multiple linear regression analysis revealed that with the exception of concentration-related study habit which predict

academic achievement, all the other domains do not. The next chapter presents the summary, conclusion and recommendations of the study.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Overview of the Study

The study was a descriptive survey which investigated the relationship between study habits and test anxiety as correlate of senior high school students' academic achievement in the Ekumfi District of the Central Region of Ghana. Bakare (1977) study habits inventory and Cassady and Johnson (2002) Test Anxiety Theory served as the theoretical framework of the study. Purposive sampling, stratified and simple ranom sampling techniques were used to sample 306 students for the study.

Structured questionnaire consisting of 68 items were used to collect data for the study. The data collected were analysed mainly by descriptive statistics: mean, standard deviation and percentages. Independent sample t-test and multiple linear regression were also used.

Findings of the Study

1. The findings revealed that Senior High school students in the Ekumfi District generally practiced good study habits. Even though the results disclosed that time management-related study habits were dominant among the students than reading and note-taking related study habits, concentration-related study habits, examination-related study habits and homework and assignment-related study habits, it was found that the students combined all the facets of the study habits outlined in the study.
2. The study established that Senior High school students in the Ekumfi District experience high test anxiety and this has resulted in their

dismal academic achievements in both internal and external examinations.

3. In determining the association between study habits and its impact on academic achievement, the findings disclosed that there was no correlation between students' overall study habits and academic achievement. It was found that the combination of the study habits inventory does not contribute significantly to the students' academic achievement. That is, overall study habit was not a determinant of student academic achievement. However, it was discovered that concentration-related study habits contribute significantly to student academic achievement.
4. It was observed that even though there was a weak correlation between test anxiety and overall academic achievement, the relationship was not statistically significant. However, there was moderate and statistically negative relationship between Mathematics and Integrated Science achievement. The findings revealed that there was no statistically significant difference between the study habits of males and females in the Ekumfi District. Both male and females practice the same study habits.
5. It was further discovered that even though both sexes experience high test anxiety, there was statistically significant difference in the test anxiety of males and females.
6. Moreover, it was realised that study habits and test anxiety collectively did not predicted students' academic achievement.

Conclusions

The concept of study habits and test anxiety based on Bakare's (1977) inventory and Cassady and Johnson (2002) test anxiety theory respectively are not new among Senior High School students in the Ekumfi District in the Central Region of Ghana. The students practiced multiple study habits although much attention was geared towards concentration-related study habits. This implies that the students were conscious of concentration and it impacts on their academic endeavours. There is enough evidence from the study that study habits are vital in determining academic achievement of students. It is expected that school authorities and stakeholders would guide the students to develop and implement effective study habits activities in order to promote good academic achievement

Accordingly, it was ascertained that moderate level of anxiety is significant since it serves as a motivator which enhance academic achievement. However, low and high anxiety is detrimental to the student academic achievement. Therefore, in order to improve academic achievement in the Ekumfi District, it is imperative to offer direction and guidance to students so as to avoid the negative consequences of the construct.

Recommendations

Based on the research findings and the conclusions presented above, the following recommendations are proposed:

1. The study disclosed that both sexes practiced same or similar study habits. As a result, it is recommended that parents, teachers and educational authorities should pay special attention to the kind of study

habits the students practice in their learning since any bad study habits adopted by one is likely to be imitated by all the students.

2. Teachers should support their students by motivating them, developing effective study habits and demonstrating commitment to their work so that the students are adequately prepared for examinations, and raises their confidence and optimism to excel. The schools should intensify the organisation of co-curricular programmes such as games, excursions and quizzes to minimise the anxiety of the students and boost their concentration for examinations.
3. The study has shown that concentration-related study habits contributed significantly to academic achievement. Therefore, it is recommended that headmasters and teachers should take appropriate measures to enhance student's concentration during teaching and learning and also during their personal study periods in order to boost academic achievement. Moreover, the students should be reoriented to improve their study habits in terms of reading and note-taking, time management, time allocation, and homework/ assignment as these are critical aspects of schooling.
4. The study findings disclosed that generally, there is high level of test anxiety among the students. It is recommended that, Ministry of Education, Ghana Education Service, the National Council for Curriculum and Assessment (NACA) and other policy makers are to liaise with each other to develop programmes and policies that when implemented would help alleviate fear, low and high anxiety experienced by students in order to improve their achievement in

examinations. Moreover, education programmes like symposia and school cultural festivals should be organised to boost students' self-esteem, and eliminate negative past experiences and beliefs about test so that the students can face the challenge of examination with confidence a reasonable level of anxiety.

5. Additionally, it is therefore, recommended that the Ministry of Education and the Ghana Education Service should design and implement programmes to educate students on the importance of developing and applying effective study habits to their studies.

Suggestions for Further Studies

The following are recommended for further studies:

1. The study was descriptive in nature. In order to accept or refute the findings of the study and generalise, it is proposed that the study should be conducted throughout central region to ascertain the nature of study habits employed by students, test anxiety and how they impact their academic achievement.
2. It is also suggested that the study is replicated in both public and private senior high schools in the country. This will help develop a national strategy to improve on the academic performance in the entire country.

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APPENDICES

APPENDIX A

UNIVERSITY OF CAPE COAST

COLLEGE OF EDUCATION STUDIES

DEPARTMENT OF EDUCATION AND PSYCHOLOGY

QUESTIONNAIRE FOR STUDENTS

This questionnaire aims to collect information on student's study habits, test anxiety and academic achievement of SHS 3 students in the Ekumfi District in the Central Region. It is hoped that the results of the study will help in policy decisions concerning students on the study variables in Ghana. No attempt will be made to associate your name or institution with the completed instrument. This questionnaire is strictly for academic exercise, and you are please requested to provide accurate and frank information that will assist the researcher in obtaining the correct data for this exercise. Your responses will be treated in strict confidence.

The questionnaire is divided into four sections. The first section is for eliciting information about background characteristics. The other three sections are about study habits, test anxiety and academic achievement respectively.

Instruction: You are kindly requested to tick (√) where appropriate or indicate in writing where deemed necessary for each item on this questionnaire.

SECTION A: Personal Information

1. Gender: Male [ ] Female [ ]

2. Age: Below 15 [ ] 15- 17 [ ] 18-19 [ ] 20-21 [ ] 22 and above [ ]

3. Are you staying with both parents? Yes [ ] No [ ]

4. If **Yes** to question three (3), what is their level of education?

a) Father's Qualification……

b) Mother's Qualification……

5. If **No** to question three (3), who are you staying with?

Father Only [ ] Mother Only [ ] Uncle [ ] Siblings [ ]

Others, please specify……

6. What is the educational qualification of the person you are staying with?

……..

7. How do you learn in the house?

Assisted by my guardian [ ]

Have a personal timetable [ ]

Assisted by my siblings [ ]

Have a private teacher [ ]

SECTION B: Study Habits

Instructions

The following is a list of questions concerning your study habits. Read each statement carefully and answer it as accurately as possible

Please *tick* (√) where appropriate the box (1-4) for each statement

4 *=Strongly Agree;* ***3****= Agree;* ***2*** *= Disagree;* ***1*** *= Strongly Disagree.*

S/N	Statements	SA	A	D	DA
8.	I do poorly in tests because I find it hard to think clearly.				
9.	I get nervous and confused when taking a test and therefore fail to answer the questions.				
10.	When getting ready for a test, I arrange facts to be learned in some planned order.				
11.	I am careful about spelling, punctuation and grammar when answering test questions.				
12.	I can finish tests within the time allowed.				
13.	I finish my examination papers and hand them in before time during an examination.				
14.	When my assigned homework is too long or hard, I either stop or answer only the easier parts.				
15.	If I am absent from class, I make up missed lessons and notes immediately.				
16.	Even though an assignment is dull and boring I stick				

	to it until it is completed.				
17.	I put off doing written assignments until the last minute.				
18.	I begin my assignments as soon as the teacher gives them to me and not allow them to pile up.				
19.	I read my notes only once, before the examination starts.				
20.	After reading several pages of an assignment, I find it easy to remember what I have read.				
21.	I find it easy to pick out the important points of a reading assignment.				
22.	When reading a long assignment I stop now and then to try to remember what I have read.				
23.	I have to re-read material several times because the words don't have much meaning the first time I go over them.				
24.	I have trouble picking out the important points in the material I read or studied.				
25.	I go back and recite to myself the material I have studied, rechecking any points I find doubtful.				
26.	I miss important points in class while copying down notes.				
27.	I pronounce words to myself as I read.				
28.	I read only books prescribed by my teacher for				

	his/her subjects.				
29.	I find that day dreaming distracts my attention from lessons while studying.				
30.	I find it hard to keep my mind on what I am studying for any length of time.				
31.	Outside interruptions disturb me while am studying.				
32.	I focus entirely on my work when I am studying.				
33.	I feel sleepy and drowsy whenever I want to study.				
34.	I can only study when a place is completely quiet.				
35.	I waste too much time watching TV instead of studying.				
36.	I find that having many other things to do cause me to get behind in my school work.				
37.	Problems outside the classroom, with other students or at home cause me to neglect my school work.				
38.	I study for at least three hours each day after classes.				
39.	I spend too much time on some subjects and not enough on others.				
40.	I spend too much time reading other books for the good of my school work.				

SECTION C: Test Anxiety.

Instructions

The following is a list of questions concerning your anxiety during an examination.

On a scale of **4– 1, (*4 = A- Very typical of me, 3= B- Quite typical of me, 2 = C- Only somewhat typical of me, 1= D- Not at all typical of me***), rate your agreement to the following statements. Read each statement carefully and answer it as accurately as possible**.**

Please *tick* (√) where appropriate the box (1-4) for each statement

S/N	Statements	A	B	C	D
41.	I lose sleep over worrying about examinations				
42.	While taking an important examination, I find myself wondering whether the other students are doing better than I am.				
43.	I have less difficulty than the average college student in getting test instructions straight.				
44.	I tend to freeze up on things like intelligence tests and final exams.				
45.	I am less nervous about tests than the average college student.				
46.	During tests, I find myself thinking of the consequences of failing.				

47.	At the beginning of a test, I am so nervous that I often can't think straight.				
48.	The prospect of taking a test in one of my courses would not cause me to worry.				
49.	I am calmer in test situations than the average college student.				
50.	I have less difficulty than the average college student in learning assigned chapters in textbooks.				
51.	My mind goes blank when I am pressured for an answer on a test.				
52.	During tests, the thought frequently occurs to me that I may not be too bright.				
53.	I do well in speed tests in which there are time limits.				
54.	During a course examination, I get so nervous that I forget the facts I know.				
55.	After taking a test, I feel I could have done better than I did.				
56.	I worry more about doing well on tests than I should.				
57.	Before taking a test, I feel confident and relaxed.				

58.	While taking a test, I feel confident and relaxed.				
59.	During tests, I have the feeling that I am not doing well.				
60.	When I take a difficult test, I feel defeated before I even start.				
61.	Finding unexpected questions on a test causes me to feel challenged rather than panicky.				
62.	I am a poor test taker in the sense that my performance on a test does not show how much I know about a topic.				
63.	I am not good at taking tests.				
64.	When I first get my copy of a test, it takes me a while to calm down to the point where I can begin to think straight.				
65.	I feel under a lot of pressure to get good grades on tests.				
66.	I do not perform well on tests.				
67.	When I take a test, my nervousness causes me to make careless errors.				

SECTION D: Academic achievement

68. SHS. 3 English Language Mathematics Integrated Sci. Social Std.

Mock Score ☐ ☐ ☐ ☐

APPENDIX B

INTRODUCTORY LETTER

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
FACULTY OF EDUCATIONAL FOUNDATIONS
DEPARTMENT OF EDUCATION AND PSYCHOLOGY

Telephone: 0332091697
Email:dep@ucc.edu.gh

UNIVERSITY POST OFFICE
CAPE COAST, GHANA

14th January, 2021

Our Ref:

Your Ref:

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

THESIS WORK
LETTER OF INTRODUCTION
MR. EMMANUEL ADJEI

We introduce to you Mr. Adjei, a student from the University of Cape Coast, Department of Education and Psychology. He is pursuing a Master of Philosophy degree in Measurement and Evaluation and he is currently at the thesis stage.

Mr. Adjei is researching on the topic:

"STUDY HABITS AND TEST ANXIETY AS CORRELATES OF STUDENTS' ACADEMIC ACHIEVEMENT OF SHS STUDENTS IN THE EKUMFI DISTRICT."

He has opted to collect or gather data at your institution/establishment for his Thesis work. We would be most grateful if you could provide him the opportunity and assistance for the study. Any information provided would be treated strictly as confidential.

We sincerely appreciate your co-operation and assistance in this direction.

Thank you.

Yours faithfully,

Ama A. Ocran (Ms.)
Principal Administrative Assistant
For: **HEAD**

APPENDIX C

ETHICAL CLEARANCE LETTER

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
ETHICAL REVIEW BOARD

UNIVERSITY POST OFFICE
CAPE COAST, GHANA

Our Ref: CES-ERB/ucc-edu/V5/21-31

Date: 15th April, 2021

Your Ref: .....

Dear Sir/Madam,

ETHICAL REQUIREMENTS CLEARANCE FOR RESEARCH STUDY

The bearer, Emmanuel Adjei ..., Reg. No. EF/MEP/19/0002 is an M.Phil. / ~~Ph.D~~. student in the Department of Education and Psychology ..... in the College of Education Studies, University of Cape Coast, Cape Coast, Ghana. He / ~~She~~ wishes to undertake a research study on the topic:

Study habits and test anxiety as correlates of students' academic achievement of SHS students in the Ekumfi District

The Ethical Review Board (ERB) of the College of Education Studies (CES) has assessed his/~~her~~ proposal and confirm that the proposal satisfies the College's ethical requirements for the conduct of the study.

In view of the above, the researcher has been cleared and given approval to commence his/~~her~~ study. The ERB would be grateful if you would give him/~~her~~ the necessary assistance to facilitate the conduct of the said research.

Thank you.
Yours faithfully,

Prof. Linda Dzama Forde
(Secretary, CES-ERB)

Chairman, CES-ERB
Prof. J. A. Omotosho
jomotosho@ucc.edu.gh
0243784739

Vice-Chairman, CES-ERB
Prof. K. Edjah
kedjah@ucc.edu.gh
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Secretary, CES-ERB
Prof. Linda Dzama Forde
lforde@ucc.edu.gh
0244786680

APPENDIX D

Data exploration and missing data output.

		Valid	Missing
	SH1	278	0
	SH2	278	0
	SH3	278	0
	I am careful about spelling, punctuation and grammar when answering test questions.	278	0
	I can finish tests within the time allowed.	278	0
	I finish my examination papers and hand them in before time during an examination.	278	0
	When my assigned homework is too long or hard, I either stop or answer only the easier parts.	278	0
	If I am absent from class, I make up missed lessons and notes immediately.	278	0
	Even though an assignment is dull and boring I stick to it until it is completed.	278	0
	I put off doing written assignments until the last minute.	278	0
	I begin my assignments as soon as the teacher gives them to me and not allow them to pile up.	278	0
	I read my notes only once, before the examination starts.	278	0
	After reading several pages of an assignment, I find it	278	0

	easy to remember what I have read.		
	I find it easy to pick out the important points of a reading assignment.	278	0
	When reading a long assignment I stop now and then to try to remember what I have read.	278	0
	I have to re-read material several times because the words don't have much meaning the first time I go over them.	278	0
	I have trouble picking out the important points in the material I read or studied.	278	0
	I go back and recite to myself the material I have studied, rechecking any points I find doubtful.	278	0
	I miss important points in class while copying down notes.	278	0
	I pronounce words to myself as I read.	278	0
	I read only books prescribed by my teacher for his/her subjects.	278	0
	I find that day dreaming distracts my attention from lessons while studying.	278	0
	I find it hard to keep my mind on what I am studying for any length of time.	278	0
	Outside interruptions disturb me while am studying.	278	0
	I focus entirely on my work when I am studying.	278	0
	I feel sleepy and drowsy whenever I want to study.	277	1
	I can only study when a place is completely quiet.	278	0

	I waste too much time watching TV instead of studying.	278	0
	I find that having many other things to do cause me to get behind in my school work.	278	0
	Problems outside the classroom, with other students or at home cause me to neglect my school work.	278	0
	I study for at least three hours each day after classes.	278	0
	I spend too much time on some subjects and not enough on others.	278	0
	I spend too much time reading other books for the good of my school work.	278	0
	I lose sleep over worrying about examinations	278	0
	While taking an important examination, I find myself wondering whether the other students are doing better than I am.	278	0
	I have less difficulty than the average college student in getting test instructions straight.	278	0
	I tend to freeze up on things like intelligence tests and final exams.	278	0
	I am less nervous about tests than the average college student.	278	0
	During tests, I find myself thinking of the consequences of failing.	278	0
	At the beginning of a test, I am so nervous that I often can't think straight.	278	0

	The prospect of taking a test in one of my courses would not cause me to worry.	278	0
	I am calmer in test situations than the average college student.	278	0
	I have less difficulty than the average college student in learning assigned chapters in textbooks.	278	0
	My mind goes blank when I am pressured for an answer on a test.	278	0
	During tests, the thought frequently occurs to me that I may not be too bright.	278	0
	I do well in speed tests in which there are time limits.	278	0
	During a course examination, I get so nervous that I forget the facts I know.	278	0
	After taking a test, I feel I could have done better than I did.	278	0
	I worry more about doing well on tests than I should.	277	1
	Before taking a test, I feel confident and relaxed.	278	0
	While taking a test, I feel confident and relaxed.	278	0
	During tests, I have the feeling that I am not doing well.	278	0
	When I take a difficult test, I feel defeated before I even start.	278	0
	Finding unexpected questions on a test causes me to feel challenged rather than panicky.	278	0
	I am a poor test taker in the sense that my	278	0

	performance on a test does not show how much I know about a topic.		
	I am not good at taking tests.	278	0
	When I first get my copy of a test, it takes me a while to calm down to the point where I can begin to think straight.	278	0
	I feel under a lot of pressure to get good grades on tests.	278	0
	I do not perform well on tests.	278	0
	When I take a test, my nervousness causes me to make careless errors.	278	0
	English Language	278	0
	Mathematics	278	0
	Integrated Science	278	0
	Social Studies	276	2

APPENDIX E

Sample of English Language Mock Questions

EKUMFI EDUCATION DIRECTORATE

FINAL MOCK EXAMINATION, 2021

ENGLISH LANUAGE (SHS3)

PAPER 2

SECTION A

ESSAY - [50 MARKS]

Answer one question only from this section

All questions carry equal marks. Your answer should not be less than 450 word

1. Write a letter to the Ministry of Education in your country on the poor state of your schools in your area and its effects on the performance of students.

2. As the principal speaker in an inter- school debate. Write your argument for or against the motion. Abstinence is the best way to prevent HIV / AIDS.

3. Write a story in which you where personally involved, ending with, "If I Knew he was that kind of person, I wouldn't have gone out with".

4. People have been abusing the environment through indiscriminate dumping of refuse. Write a letter to the minister of health giving at least three reasons why you think the environment

Should be protected.

5. Write an article suitable for publication in a school magazine on the topic "***The Disadvantages of***

Students' Demonstration on Campus"

SECTION B

COMPREHENSION

[40 MARKS]

Read the following passage carefully and answer the questions on it

Parents can play important roles as managers of adolescents: They have the opportunity to monitor social relationships and can be seen as social initiators and arrangers. An important developmental development task in adolescence is to develop the ability to make **competent** decisions in an increasingly independent manner. To help adolescents reach their full **potential**, an important parental role is to be an effective manager, one who finds information, make contact, helps to structure choice, and provides guidance.

Parents who fulfill this important managerial role help adolescents to avoid pitfalls and the work their way through a myriad of choices and decisions they may face.

Parents can serve as regulators of opportunities for their adolescents. They can regulate social contact with peers, friends, and adults. From infancy through adolescence, mothers are more likely than fathers to have a managerial role in parenting. In infancy, this might involve taking a child to the doctor and arranging for child care, in early childhood it might involve a decision about which preschool the child should it might include directing the child to take a bath, to match their clothes and wear clean clothes and to put away toys. In adolescence, it

could involve participating in a parent –teacher conference and subsequently managing the adolescent's homework activity.

A key aspect of the managerial role of parenting is effective monitoring of the adolescent. This is especially important as children move into the adolescent years. Monitoring includes supervising an adolescent in a choice of social settings, in their activities and with their friends. Lack of adequate parental monitoring is the parental factor that is most related to juvenile delinquency.

There are four types of parenting styles: **authoritarian,** authoritative, neglectful and **indulgent.**

Authoritarian parenting is a restrictive, punitive style in which the parent exhorts the adolescent to follow a certain direction and to respect work and effort. There is little verbal exchange.

Adolescents of authoritative parents are often anxious about social comparison, fail to initiate activity and have poor communication skills.

The authoritative parenting style encourages adolescents to be independent but still places limits and controls on their actions. Extensive verbal give and take is allowed and parents are warm and **nurturing** towards the adolescent. Adolescents of authoritative parents are self-reliant and socially responsible.

Neglectful parenting is a style in which the parent is much uninvolved in the adolescents' life. If

you said to the neglectful parent; "it is 10: 00pm, do you know where your adolescent is? They would not be able to answer the question.

Adolescents with neglectful parents are often socially incompetent. They show poor self-control and do not handle independence well.

Indulgent parenting is a method in which parents are highly involved with their adolescents but place few demands on them and don't really expert control over them. Indulgent parents allow their adolescents to do what they want and the result is that the adolescents never learn to control their own behavior.

As a result they always expect to get their way. This is type of parenting is associated with adolescents social incompetence, especially a lack of self-control.

a. Identify three ways from the passage in which parents can effectively manage their adolescents in order for them to reach their potential.

b. Mention an important task an adolescent must develop

c. What is a characteristic of neglectful parenting?

d. What are the traits exhibited by adolescents under authoritative parenting.

e. What does lack of adequate parental monitoring result in?

f. What literary device is used in "parents as managers of adolescents?"

g. "Parent **who fulfill this important managerial role** help adolescents to avoid pitfalls …….. and decisions they face.

What is the grammatical name for the underlined?

What is its function?

h. For each of the following words find another word or phrase that means the same and can replace it as it is used in the passage

i. Competent

ii. Potential

iii. Authoritarian

iv. Indulgent

v. Nurturing

SECTION C

SUMMARY

[30 MARKS]

Read the following passage carefully and answer the questions on it

For generations Africans economics have remained at a basically subsistence level.

Efforts at improving this situation through diversification of these economics were made toward the end of the last century. The World Bank and what Politician call "development partners" dictated many of the measures. But these measures have, in turn, given rise to a number of problems, especially for ordinary workers, and threaten to undermine any gains made.

Industrialization, the supplement for agriculture, has offered many benefits. For instance, it has led to the rise of townships, with beautiful skyscrapers beginning to appear on the African horizon. It has led to a rise in per capital income, and to the provision of basic amenities, especially. In the townships. There are supposed to be some of the makers of improvements in standard of living.

But industrialization also has its disadvantages, the gravest of them being the further impoverishment of the ordinary worker in the township. In a typical industrial town, one leaves the gleaming buildings of the affluent, with their beautiful landscapes quarters. There are the slums, usually surrounded by, stinking, and slimy green water. The houses themselves are merely a few wooden stakes drive into the ground and fenced with age, and roofed with the same material. They appear blown off their foundations in a strong wind and indeed some of them do get blown off.

The inhabitants too work – beaten and dressed in worn out threadbare clothes, are no firmer on their feet than their houses. These are ordinary workers who seen to have given up hope of more comfortable life and merely scrounge a living from their meager wages. They leave for work in the factories early in the morning and return home late to families that welcome then with little you.

But if these are the people who operate our factories, who blast the rocks deep down in the Earth's bowels to produce the nations much needed wealth there is the livelihood so that they don't become the dregs,

but rather the happy operators of the industrial system.

1. State three benefits of industrialization in three sentences
2. In three short sentences write three advantages of industrialization.

DO NOT TURN OVER THIS PAGE UNTIL YOU ARE TOLD TO DO SO

YOU WILL BE PENALIZED SEVERELY IF YOU ARE FOUND LOOKING AT THE NEXT PAGE BEFORE YOU ARE TOLD TO DO SO.

---

1. **Use pencil throughout the shading and use pen to write your name and class. Fill all other information in the space provided.**

PAPER 1

OBJECTIVE TEST

LEXIS AND STRUCTURE

SECTION I

In each of the following sentences, there is a word underlined, and one gap. From the list of words lettered A to E, choose the word that is most nearly opposite in meaning to the underlined word and that will at the same time, correctly fill the gap in the sentence.

1. The story he told was a **fact**; it was not……

a. lie b. exaggeration c. satire d. prologue e. fiction

2. **Industrious** students will pass the exam …ones will no doubt fail

a. weak b. poor c. lazy c. gently e. ambitious

3. The striking thing about the twins is that while Panyin is very **extravagant**, Kakra is rather

a. thrifty b. generous c. spendthrift d. sober e. poor

4. To be falsely **modest** is another way of being

a. mean b. boastful c. friendly d. fashionable e. polite

5. Often, what one man **adores,** another man…….

a. worships b. flees c. relents d. doubts e. detests

6.He **intentionally** hid the document but his secretary……burnt them

a. carelessly b. willingly c. accidentally d. foolishly

7. It is curious how Hagan can be so **carefree** in his ways while his younger brother is so

a. meticulous b. eccentric

c. indifferent d. active

8. The television booths were all……and I had to wait for more than ten minutes for one to become **vacant**

a. locked b. busy

c. occupied d. ringing

9. His father is an……..driver but he is only a **novice**

a. enlightened b. aged

c. excellent d. experience

10. In any group there are people who display **apathy** and others who show a lot of……..

a. enthusiasm b. patience

c. respect d. tolerance

SECTION II

From the list of words lettered A to E, choose the one that best completes each of the following sentences

11. As a result of Ayew's injury the……..of the Black Stars was very low during the match

a. moral b. morale c. momentum

d. capacity e. skill

12. The tank overflowed because the……..valve was blocked

a. output b. outlet c. outlay

d. outcome e. outbreak

13. He can see beautiful…….from his balcony

a. scene b. scent c. senery

d. scenario e. scentic

14. The two parties in the dispute finally agreed on a / an

a. impasse b. criterion c. motion

d. compromised e. standpoint

15. If there is no, one to…….your account you will not believed

a. refute b. corroborate c. facilitate

d. cross examine e. condone

16. Look here, my friend, your story is……to be believed

a. so much strange b. so very strange

c. very much strange d. too strange

17. Would you object to……to have lunch with me tomorrow

a. me ask you b. my ask you

c. my asking you d. I asking you

18. There were men on the job day and night all the time that this hotel……

a. was building b. was being built

c. was built d. is being built

19. Many and Jane are always fighting…….

a. each other b. themselves

c. another e. the other

20. Don't let him bully you; you must stand up……..him

a. for b. before

c. to d. against

SECTION III

Choose from the alternatives lettered A – E the one which is Nearest in Meaning to the underlined word or expression in each sentence

21. Esi was somewhat **appealed** by the shabby appearance of the man who brought her the message

a. dismayed b. disguised c. dishonoured

d. disinterested e. dismissed

22. After the marathon some of the competitors felt completely **done in**

a. cheated b. strained c. satisfied

d. disappointed e. exhausted

23. Do not **humiliate** him any further with your comments

a. mock b. torture c. flatter

d. discourage e. deceive

24. The measures announced by the government to **revive** the economy are austere

a. keep down b. modernize c. stabilize

d. revamp e. generate

25. The club will not entertain any **ignominious** behavoiur from members.

a. cold b. shameful c. unlikely

d. lazy e. practical

26. Mr. Mensah **emphasized** that he wanted neatness and legibility in all written work.

a. said b. implied c. expressed

d. stressed e. asserted

27. The newspaper described the recent events as **catastrophic.**

a. disastrous b. evil c. encouraging

28. A special committee was set up, and the decision reached a week earlier was **deferred.**

a. ignored b. put into effect

c. cancelled

d. discussed e. put off

29. Our teacher has not fully **expatiated** that point

a. discussed b. argues c. generalized

d. expanded e. explained

30. The policeman attempts to **put down** the rebellion were unsuccessful.

a. extinguish b. quell c. allay

d. modify e. alleviate

SECTION IV

After each of the following sentences, a list of possible interpretations of all or part of the sentence is given. Choose the interpretation you consider most appropriate for each sentence

31. The importance of the local research cannot be overemphasized. This means…….

a. it is not good to stress local research too much

b. local research is of very great importance

c. it is not permissible to encourage local research

d. local research is more important than any other kind

32. The result of the school certificate examination was everything but good. This means that the result was

a. good b. fair c. not good

d. both good and bad e. generally good

33. Besides being a thief, Kwesi is a bully. This means that Kwesi is……

a. sitting beside a thief b. neither a thief nor a bully

c. only a thief d. only a bully

d. both a thief and a bully

34. We cannot but accept Kofi's invitation to the party. This means that……..

a. we did not accept the invitation

b. we were not invited c. the invitation came too late

d. we did not see the need to accept the invitation

e. we accepted the invitation

35. You needn't have bold her what happened. This means that you……

a. shouldn't tell her b. must not tell her

c. should not have tell her d. did not tell her

e. were afraid to tell her

36. The scandal will soon blow over. This means that the scandal will soon be……..

a. investigate b. revealed c. forgotten

d. covered up

37. A principal person will not change his lifestyle just to be able to move with people. This means that…….

a. does not do what most people do

b. does not associate with others

c. does not love his friends

d. is not satisfied with life

38. Assopiah's reply clearly begged the question. This means that he……

a. not answer correctly b. evaded the question

c. asked for explanation d. did not understand the question

39. Mrs. Amoah closed her eyes over her son's misdeeds. This means that she…..

a. was shocked by the misdeeds

b. was in bed when she heard of the misdeeds

c. refused to do anything about the misdeeds

d. did not see her son's misdeeds

40. There is no love lost between those two friends. This means they

a. still see each other b. look for each other

c. love each other intensely d. hate each other intensely

SECTION V

In the following passage, the numbered gap indicate missing words. Against each number in the list below the passage, four choices are offered in columns lettered A to D for each numbered for that number the word that is most suitable to fill the gap.

Foods are the most advertised group of all **41** products in the United States. Food products **42** in expenditures for television advertisements. In other **43** such as newspapers, magazines and radio, food advertising expenditures rank near the top. Food manufactures spend **44** on advertising than any other manufacturing group. In 1978, breakfast cereals, soft drinks and prepared food **45** for only an estimated 20 percent of the cost of food advertisements. **46** these item up about 50 percent of all media advertising.

By **47**, highly **48** foods such as unprocessed meats, fish, eggs, fruit, and vegetables accounted for about 10 percent of food adverts in the national media. These products tend to be most heavily advertised by the **49** sector in local newspapers, where they accounted for an estimated **40** percent of advertisement of **50.**

	A	B	C	D
41.	custom	client	customer	consumer
42.	follow	lead	fly	jump
43.	media	means	mode	manner
44.	more	many	much	least
45.	totaled	made up	amounted	accounted
46.	so	then	yet	how
47.	similarity	contrast	relation	relatively
48.	destructive	delicate	perishable	expired
49.	bargain	product	retail	marketed
50.	drinks	beverages	groceries	daily products

PAST B

LITERATURE

PROSE

AMA ATA AIDOO - A GIFT FROM SOMEWHERE

Read the extract and answer

"Look at my hands, My Fingers are dead with typing. Oh God, I don't know what to do"

51. Who is speaking?

a. Connie

b. Mercy

c. Joe

d. James

52. Who is being addressed?

a. Joe

b. Mercy

c. James

d. Connie

53. Who is the speaker to the

a. brother

b. mother

c. sister

d. aunt

54. The song, count Mercy, count your blessings' is sung by

a. Mercy's mobile phone

b. Mercy's colleagues in the office

c. Mercy's new pair of black shoes

d. Mercy's fans

55. Who bought a pair of shows and a handbag for Mercy

a. Mensor Arthur

b. Joe

c. James

d. Connie

56. Mercy's parents were…….

a. Catholics

b. Baptists

c. Presbyterian

d. Methodist

57. The statement "The engire hummed into motion" is an example of…….

a. simile

b. metaphor

c. personification

d. metonyn

58. Connie is how many years older than Mercy

a. five years

b. six years

c. four years

d. two years

59. What is the name of Mercy's boyfriend after the coup?

a. captain Ashley

b. Joe

c. James

d. Mensar Arthur

60. After the coup Mensar – Arthur……

a. goes to jail

b. becomes a Christian

c. runs away

d. maries Mercy

DRAMA

YAW ASARE' Ananse in the land of Idiot

Read the extract below and answer questions 61 to 71

"Just look at him! How can such a sleepy scare crow embody the watchful vigilance of an empire?

61. Who is the speaker

a. ananse

b. king dosey

c. pootagyiri

d. akpala

62. Who is referred to as sleepy scare crow?

a. odudu

b. akpala

c. ananse

d. mbasila

63. While Ananse takes princess Sodziisa measurement, Odudu is on an errand to….

a. bring ananse's food

b. fetch water

c. swime in the water

d. buy honey

64. Who is described by Akpala as bragging fool

a. Pootagyiri

b. King Dosey

c. Ananase

d. The priestess

65. Which people bury Pootagyiri?

a. Mbasila and Odulu

b. Odulu and Ananase

c. Ananse and Akpala

d. Akpala and Odudu

66. Pootagyiri is arrogant but he rather accuse Akpala of being arrogant. This is an instance of……

a. a paradox

b. a pun

c. enlogy

d. a deviation

67. During the marriage ceremony Ananse is warned not to

a. doze off

b. smile

c. frown

d. speak

68. Which of the following best describes Pottagyiri

a. a braggart

b. a cheat

c. a weakling

d. a foot

Read the following passage and answer the questions that follow to answer questions 69 and 70.

"The priestess won't eat, drink or talk, she insists Ananse's defilement and the catastrophe it entails remains with us as long as Ananse lived"

69. Who is the speaker?

a. the old one

b. the queen

c. Pootegyiri

d. king dosey

70. Who speaks after the speaker about

a. Ananse as Pootagyiri

b. the Queen

c. the old one

d. Odudu

POETRY

Andrew Marvell: The Definition of Love

71. The word 'Poles' refers to……

a. goal posts

b. electricity poles

c. the north pole as the south poles

d. pole vault

72. Who is able to see love as entities?

a. fate

b. hope

c. impossibility

d. anger

73. Who is the chief enemy of love?

a. despire

b. hope

c. fate

d. impossibility

74. Hope is described as feeble. This means that hope is

a. strong

b. wicked

c. inconsistent

d. weak

75. The person consider love to be……..

a. a divine thing

b. a vain thing

c. a feeble thing

d. a united thing

76. The dominant figure of speech in this poem is

a. metaphor

b. synecdoche

c. sarcasm

d. personification

Percy Vyssche Shelley: Ozymandias

77. Ozymandias is an example of a

a. metaphor poem

b. romantic poem

c. medieval poem

d. victoria poem

78. King of Kings is an……referring to Ozymandias

a. epithet

b. lampoom

c. cliché

d. sign

79. The repeating of ‘s’ and ‘t’ in who said. Two vast and trunkless legs of stone is

a. homonym

b. antomym

c. mine

d. alliteration

80. “Visage” means……..

a. face

b. imgae

c. status

d. body

APPENDIX F

Sample of Mathematics Mock Questions

EKUMFI EDUCATION DIRECTORATE

FINAL MOCK EXAMINATION, *2021*

CORE MATHEMATICS (SHS 3) Duration: *2hr 30 mins.*

PAPER 2

100 marks

Answer ***10*** questions in all. ***All*** questions in Section A and ***five*** questions from Section B

In each question, all necessary details of working, including rough work, ***must*** be shown with the answer.

Section A

40 marks

1. a. Draw a table for multiplication $\otimes$ in modulo 11 for the set $\{1,5,9,10\}$

   b. Use your table to find the truth set of

   i. $10 \otimes m = 2$ ii. $n \otimes n = 4$

2. a. P varies inversely as the square of $(Q + 1)$ and $P = 2$ when $Q = 3$. Write an equation connecting

   P and$Q$. Hence find Q when $P = 8$

   b. Simplify $\frac{\log 729}{log 9}$

3. a. Simplify $\left(\frac{27}{64}\right)^{-2/3}$

   b. Solve $\frac{x}{3} - \frac{1}{4}(x + 2) > 3x - 2\frac{1}{5}$

4. If P, Q and R are sets such that $n(P) = 20, n(Q) = 16, n(R) = 21, n(P \cap R) = 8, n(P \cap Q) = 7, n(Q \cap R) = 5, n(P \cap Q \cap R) = 3$

   a. Represent this information on the Venn Diagram

   b. Find $n(P \cup Q \cup R)$

5. a. The sum of two numbers is 8 and their product is -33. Find the numbers.

   b. Evaluate $\frac{2x-y}{z} + \frac{z+2y}{x}$, when $x = 2, y = -3$ and $z = 4$

Section B

*All questions carry **equal** marks. Answer **five(5)** questions from this section*

6. A circle has a radius of $7.5cm$. A sector with an angle of 240° is cut out from the circle

   a. Find the length of the arc of the sector

   b. If the sector is folded to form a cone , find correct to one decimal place:

      i. radius of the cone

      ii. height of the cone

      iii. volume of the cone

      iv. curved surface area of the cone $\left[\text{Take } \pi = \frac{22}{7}\right]$

7. The distribution of marks scored in a test by 30 students in form 3 Business class is as follows:

Marks	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 – 44	45 – 49
Number of students	1	3	4	6	7	4	3	2

a. Draw a histogram to represent the data

b. Using the histogram;

i. estimate the mode of the distribution

ii. find the median of the distribution

iii. first quartile

iv. calculate the mean of the distribution

8. A binary operation ∇ is defined on the set $M = \{2,4,6,8\}$ by $a \nabla b = \frac{ab}{2} \pmod 9$.

a. Draw a table for the operation ∇.

b. Show whether or not ;

i. M is closed under the operation ∇

ii. the operation ∇ is commutative

c. Find ;

i. the value of $[(6 \otimes 2) \otimes (4 \otimes 4)] \otimes 4$

ii. the truth set of $6 \nabla m = (8 \nabla 6) \nabla (2 \nabla 2)$.

9. a. What is the value of $x + y$ in $\frac{1}{x} + \frac{1}{y} = 5$ and $\frac{1}{y} - \frac{1}{x} = 1$

   b. A viewer is 40m away from a vertical pole. The angle of elevation of the top of the pole from the boy is 30^0. Find the height of the pole.

   c. Convert 441_{five} as a number in decimal numeral.

10. Copy and complete the table below for the relation $y = 4 + 3x - x^2$ *and* $2y + 3x = 6$

X	-2	-1	0	1	2	3	4	5
Y			4					

   b. Using your graph, find the truth set of the $4 + 3x - x^2 = 3 - \frac{3}{2}x$

11. a. Simplify $3\sqrt{75} - \sqrt{12} + \sqrt{108}$, leaving your answer in radicals.

   b. Given that $3^{x/y} = \frac{1}{81}$, find x in terms of y. Hence find the value of x if $2x + 3y = 3$.

   c. Solve the inequality : $\frac{1}{2}x - \frac{5}{6}(x + 2) \leq 1 + x$, hence illustrate the solution on the numberline.

   a. Given the relation $T = \sqrt{\frac{U}{{}^1/_f + {}^1/_g}}$

      i. express g in terms of U, T and f .

      ii. find g when $T = 3, f = 4$ and $U = 5$.

   b. X varies jointly as square of m and the cube of n. When $X = 9, m = \frac{3}{4}$ and $n = \frac{1}{2}$.

      Determine the relationship between X, m and n hence calculate correct to three significant figures, the value of X when $m = \frac{2}{3}$ and $n = \frac{1}{5}$

OBJECTIVE TEST **(PAPER 1)**

50 marks

Answer all questions

Each question is followed by five options lettered A to D . Choose the correct option for each question.

1. Solve the equation $\frac{x-1}{2} + 3x = 10$

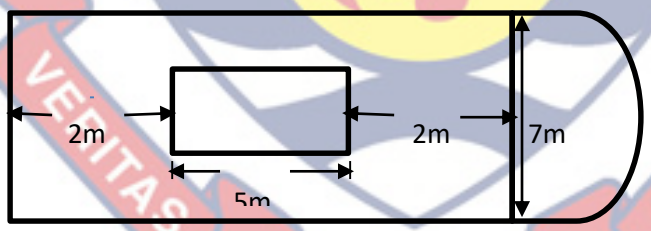
   A. $5\frac{1}{4}$ B. 4 C. 3 D. 2 E. $\frac{14}{7}$

2. Find the truthset of $2\left(1 - \frac{1}{2}x\right) < \frac{1}{3}(3 + x)$

   A. $\left\{x: x > \frac{3}{4}\right\}$ C. $\left\{x: x < \frac{1}{2}\right\}$ E. $\{x: x < 1\}$

   B. $\left\{x: x < \frac{3}{4}\right\}$ D. $\{x: x < 3\}$

3. Quaboh's recreational center consist of a semi-circle and a rectangular field with a swimming pool in the middle. Calculate the perimeter of the field.



   A. $45m$ B. $56m$ C. $37m$ D. $36m$

   E. None of the above

4. Which of the following is a factor of $3q^2 - 6p^2 + 7pq$?

   A. $(p - 3q)$ C. $(q + 3p)$ E. $(3q + 2p)$

   B. $(q - 3p)$ D. $(p + 3q)$

5. Simplify $\frac{1\div\frac{1}{b}}{\frac{1}{b}}$.

A. 1 B. $\frac{1}{b}$ C. b D. b^2 E. $\frac{1}{b}$

6. Given that x varies inversely as y^2 and $x = 64$ when $y = 3$,find x when $y = 8$

A. 2 B. 3 C. 8 D. 9 E. None

7. A cylindrical tin of diameter $13.2cm$ and height $20cm$ is filled with water to the brim. What is the volume of water in the tin?

A. $435.6\pi\ cm^3$ D. $264\pi\ cm^3$

B. $132\pi\ cm^3$ E. $871.2\pi\ cm^3$

C. $1742.4\pi\ cm^3$

8. The water bill rate R cedis of Quaboo Estate is partly constant and partly varies as the cube of the volume V litres of water consumed. Which of the following is the correct equation for the variation, where c and k are constants?

A. $R = c + \frac{k}{V^3}$ D. $R = c + k\sqrt[3]{V}$

B. $R = c + kV^3$ E. $r = c + \frac{k}{V^3}$

C. $r = c + kV^3$

9. Make k the subject of the relation

$$\frac{1}{n} = \sqrt{\frac{k^2+p^2}{hg}}$$

A. $k = \sqrt{\frac{hg}{n^2} - p^2}$ D. $k = nhgp^2$

B. $k = \sqrt{\frac{hg}{p^2} - n^2}$ E. $k = \sqrt{\frac{hg}{n} - p}$

C. $k = \frac{hg}{n} + p$

10. If $a + b = 8$ and $3b - 4 = -13a$, then what is the value of a?

$\frac{-13}{3}$ B. -3 C. -2 D. 10 E. -5

11. If the area of a circle is tripled, then the area is multiplied by ……

A. 3 C. 9 E. None of the above

B. 6 D. 27

Calculate 23×4 (modulo 5)

C. 1 B. 2 C. 3 D. 4 E. 6

Use the $\oplus$ and $\otimes$ tables for modulo 7 below to answer question 5 and question 6

$\oplus$	0	1	2	3	4	5	6
0	0	1	2	3	4	5	6
1	1	2	3	4	5	6	0
2	2	3	4	5	6	0	1
3	3	4	5	6	0	1	2
4	4	5	6	0	1	2	3
5	5	6	0	1	2	3	4
6	6	0	1	2	3	4	5

$\otimes$	0	1	2	3	4	5	6
0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6
2	0	2	4	6	1	3	5

3	0	3	6	2	5	1	4
4	0	4	1	5	2	6	3
5	0	5	3	1	6	4	2
6	0	6	5	4	3	2	1

12. Solve the equation $n \otimes (n \otimes 4) = 1$

A. $\{4,5\}$ C. $\{2,3\}$ E. $\{1,2\}$

B. $\{5,6\}$ D. $\{3,4\}$

13. Evaluate $(4 \oplus 4) \otimes 5$

A. 2 B. 3 C. 4 D. 1 E. 5

14. In the sequence $2, 6, 11, 17, 24, \ldots\ldots$ the eight term is

A. 41 B. 45 C. 51 D. 62 E. None

15. $4s - t + 1 = 0$, what is the value of $s - t$, if $2t - 5s + 1 = 0$?

A. 2 C. -2 E. None

B. -4 D. -1 and -3

16. If $x^2 = 25$, then 2^{x-1} could equal ……

A. 2 B. 4 C. 8 D. 16 E. 32

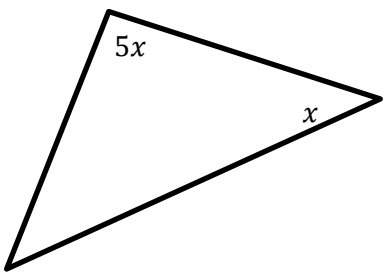
17. Eight pencils and five pens cost GHC 5.41, while nine pencils and three pens cost GHC 3.75. What is the cost of a pencil?

A. GHC 0.12 D. GHC 0.38

B. GHC 0.89 E. None of the above

C. GHC 0.15

18.



In the triangle above, $4x =$ . ...

A. 18 C. 40 E. None of the above

B. 32 D. 72

The table below shows the number of days, students of Enyanmaim Senior High were absent from school in September.

Number of days absent	1	2	3	4	5	6	7
Number of students	7	5	8	3	4	1	2

19. The mode of the distribution is ……

A. 3 B. 8 C. 7 D. 4 E. 5

20. The total numbers of absentees in September were ……students.

A. 7 B. 30 C. 28 D. 37 E. 58

21. The mean of the distribution is …….

A. 3.00 B. 3.10 C. 3.01 D. 2.99

22. If $8x + 10y$ represents the perimeter of a rectangle and $x + 3y$ represents its width, the length is ……..

A. $3x + 2y$ D. $3.5x + 3.5y$

B. $7x + 7y$ E. $9x + 13y$

C. $6x + 4y$

23. The average of 7,5,9,3 and $2x$ is x. What is the value of x?

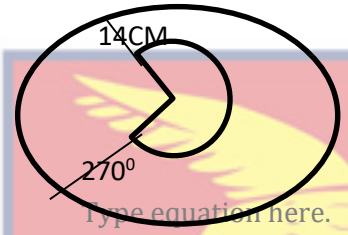
A. 2.4 B. 4 C. 6 D. 8 E. 10

24. $q * t$ is defined as $q^2 + t^2 + qt$. What is the value of $4 * (-2)$?

A. 4 C. 26 E. None of the above

B. 12 D. 28

A sector of radius $14cm$ is folded to form a cone. Use the diagram shown below to answer question 13 and question 14.



25. Find the radius of the cone.

A. $14cm$ C. $73.5cm$ E. $10.5cm$

B. $10cm$ D. $28cm$

26. The surface area of the cone is ……

A. $3{,}234cm^2$ C. $616cm^2$ E. $616cm$

B. $1{,}232cm^2$ D. $462cm^2$

27. If $\frac{a}{b} = c$ then $\log C =$

A. $\frac{\log a}{\log b}$ D. $\frac{\log a}{b}$

B. $\log a - \log b$ E. $\log \frac{b}{a}$

C. $\log(a - b)$

28. Which is the greatest?

A. 0.125 B. $\sqrt{3}$ C. $\frac{1}{\sqrt{3}}$ D. $\frac{1}{3}$ E. $\frac{1}{3\sqrt{3}}$

29. Doris has scores of 89,92,76 and 85 on four test. What must she score on the next test if she wishes her average to be 86?

A. 2.4 B. 4 C. 6 D. 8 E. 10

The tables below show the operations of $*$ and Θ on the set $\{1, 2, 3, 4\}$

$*$	1	2	3	4
1	1	2	3	4
2	2	3	4	1
3	3	4	1	2
4	4	1	2	3

Θ	1	2	3	4
1	1	2	3	4
2	2	1	4	3
3	3	4	1	2
4	4	3	2	1

From the table above:

30. Evaluate $(2 * 3)\ \Theta\ (3 * 4)$

A. 4 B. 3 C. 1 D. 2 E. 0

31. The truth set of $3 * (4\ \Theta\ q) = 2$ is ……

A. $\{1, 2, 3\}$ C. $\{1, 2\}$ E. $\{1\}$

B. $\{3\}$ D. $\{2\}$

32. How many month(s) in a leap year has / have 29 days?

A. 1 C. 12 E. None of the above

B. 11 D. 2

33. If 9 less than the product of a number and -4 is greater than 7 , which of the following could that number be?

A. -5 B. -3 C. 4 D. 5 E. -4

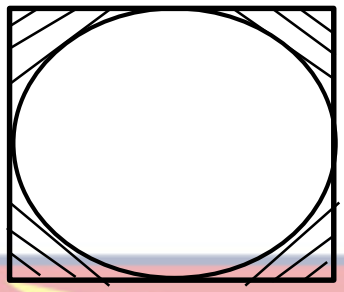
34. A ship of 20 crew members sunk, all but 5 died. How many survived?

A. 5 C. 15 E. None of the above

B. 10 D. 20

35. From the diagram below the area of the circle enclosed in the square is 8π.

What is the area of the square ?



A. 64 sq. units
B. 32 sq. units
C. 16 sq. units
D. 8 sq. units
E. 4 sq. units

36. Ten gallons of gas were added to a tank that had been $\frac{1}{4}$ full. If it is now $\frac{7}{8}$ full, how many gallons does the tank hold?

A. 16 B. 18 C. 20 D. 24 E. 22

37. Simplify $\frac{\sqrt{108}}{\sqrt{24}}$.

A. $\frac{3}{\sqrt{2}}$ C. $\frac{\sqrt{3}}{2}$ E. None of the above

B. $\frac{6\sqrt{3}}{2\sqrt{6}}$ D $\frac{3\sqrt{2}}{2}$

38. Of the following , which is the closest to the value of $\frac{65.9\times0.49}{3.3}$?

A. 10 C. 100 E. None of the above

B. 80 D. 450

39. A ladder is $8m$ long. The foot of the ladder is $3m$ away from the base of the wall. How far up the wall is the top of the ladder to the nearest whole number?

A. $9.0m$ C. $7.4m$ E. $8.0m$

B. $7.0m$ D. $8.5m$

40. Which of the following is true if

$M = \{x: 3 \leq x < 8\}$and $N = \{x: 8 < x \leq 12\}$

I. $8 \in M \cap N$ III. $M \cap N = \emptyset$

II. $8 \in M \cup N$

A. III only D. I, II and III

B. II and III only E. None of the above

C. I and II only

41. Multiply 6.4×10^8 by 3.1×10^{-5} and leave the answer in standard form.

A. 1.984×10^5 D. 1.984×10^2

B. 1.984×10^3 E. None of the above

C. 1.984×10^4

42. Find the LCM of $2 \times 3^4 \times 5$, $2^3 \times 3^3 \times 5$ and $2^2 \times 3^2 \times 5^2$

A. $2^3 \times 3^4 \times 5^2$ D. $2^2 \times 3^2 \times 5^2$

B. $2^2 \times 3^4 \times 5^2$ E. None of the above

C. $2^3 \times 3^3 \times 5^2$

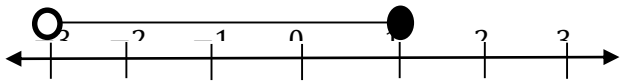
43. Convert 11.011_2 to decimal numeral.

A. 3.5 C. 6.3 E. None of the above

B. 5.3 D. 3.6

44.

y



Which of the following inequalities is represented on the number line?

A. $-3 < y < 1$ D. $1 < y \leq 3$

B. $-3 < y \leq 1$ E. None of the above

C. $-3 \leq y < 1$

45. Simplify $3x - (p - x) - (r - p)$.

A. $2x - r$ D. $2x - 2p - r$

B. $4x - r$ E. $3x - 1$

C. $2x + r$

46. For what value of x is the function $f(x) = \frac{x}{3x-2}$ undefined?

A. $\frac{3}{2}$ C. $-\frac{2}{3}$ E. None of the above

B. $\frac{2}{3}$ D. $-\frac{3}{2}$

47. If $57_{eight} = 233_x$, find x

A. 4 B. 5 C. 6 D. 7 E. 8

48. Evaluate $ut + \frac{1}{2}at^2$ given that $u = 2, t = 3$ and $a = -9.8$

A. -82.2 D. 94.2

B. -38.1 E. None of the above

C. 50.1

49. The volume of a right pyramid is $144cm^3$. If the height is $12cm$, find the base area.

A. $72cm^2$ D. $24cm^2$

B. $48cm^2$ E. None of the above

C. $36cm^2$

Good Luck

APPENDIX G

Sample of Integrated Science Mock Questions

EKUMFI EDUCATION DIRECTORATE

FINAL MOCK EXAMINATION, *2021*

INTEGRATED SCIENCE (SHS 3) 2HR45MIN.

SECTION B (THEORY)

ANSWER THREE QUESTIONS IN THIS SECTION

1. (a) i. what is refraction

   ii. With the aid of diagram, show the path of a ray of light as it passes from air to water

   (b) i. Name the types of blood vessels in the human body and state their functions

   ii. What are saturated and unsaturated hydrocarbons?

   (c) State three differences between neutralization reaction and esterification

2. (a) i. Give the general formula for saturated hydrocarbons and unsaturated hydrocarbons.

   ii. Write down the formula for 2-methylpentance

   (b) i. What is the composition of blood?

   ii. Explain how the blood carries it function in supplying Oxygen to the body.

   (c) What is light energy?

3. (a) i. State the laws of reflection of light

   ii. Draw a ray diagram to show how a virtual image of an object is formed by a converging lens.

(b) i. Write three daily applications of osmosis in living organisms.

ii. Define dispersion of light

(c) What is diffusion?

4. (a) i. State three characteristics of images formed by a plane mirror.

ii. Explain the formation of rainbow.

(b) i. write three organs protected by the skeletal system.

ii. Classify the following under acids bases and salts

HCl, CaCl, H_2SO_4, NaOH, NH_3

(c) Explain the reasons why carbon forms more compounds that any other element. Illustrate your answer with two examples.

Section A – Answer all questions

1. left ventricle of the heart has the thickest wall because
   a) It is the largest chamber of the heart
   b) It requires much pressure to pump blood to the heart.
   c) Blood which get to the left ventricle is under low pressure
   d) The left ventricle pumps blood to all the parts of the body.
2. When white light is dispersed the following colours are observed except
   a) Orange
   b) Yellow
   c) Green
   d) Magenta
3. Which of the following is true of the image formed by an object placed in front of a plane mirror? the image is formed by

a) Refraction, it is real, inverted and of the same size as the object

b) Reflection, it's real, erect and of the same size as the object.

c) Refraction, it is virtual, erect and of the same size as the object

d) Reflection, it's virtual, erect and of the same size as the object

4. Which of the following is not a product of fractional distillation of petroleum?

a) Ethanol

b) Diesel

c) Kerosene

d) Bitumen

5. The following are all characteristics of living things except

a) Excretion

b) Nutrition

c) Respiration

d) Secretion

6. The cell wall consists mainly of

a) Lignin

b) Cutin

c) Wax

d) Cellulose

7. Saturated hydrocarbons are characterized by the presence of

a) Single covalent bond between carbon atoms

b) Double covalent bond between carbon atoms

c) Triple covalent bond between carbon atoms

d) Single bond between carbon and hydrogen atoms

8. Which of the following colours is a primary colour.
    a) Cyan
    b) Green
    c) Purple
    d) Violet
9. Movement of water into plant cell causes the cell to
    a) Become turgid
    b) Become flaccid
    c) Burst its cell wall
    d) Become plasmolyzed
10. Alkanols contains
    a) Carbon, oxygen and hydrogen gas only
    b) Carbon, nitrogen and hydrogen only
    c) Carbon, oxygen and hydrogen only
    d) Carbon, and oxygen only
11. Which of the following structures do all cells possess?
    a) Nucleus
    b) Centrioles
    c) Cell wall
    d) Large vacuole
12. Which of the following controls the passage of substances in and out of the cell?
    a) Nuclear membrane
    b) Plasma membrane
    c) Cell wall

d) Endoplasmic reticulum

13. Bacteria belongs to the kingdom

a) Animalia

b) Prokaryotae

c) Protoctista

d) Fungi

14. Petroleum is made up of the mixture of

a) Alcohols

b) Hydrocarbons

c) Esters

d) Alkanoic acids

15. The major consistuent of haemoglobin is

a) Iron

b) Magnesium

c) Phosphorus

d) Sodium

16. The structure of a capillary blood vessel is related to its function by being

a) Thick walled

b) Thick and elastic

c) Thin walled

d) Very large

17. The general formula for alkane is

a) C_nH_{2n+2}

b) C_nH_{2-n}

c) C_nH_{2n}

d) C_nH_{2n+1}

18. A hydrocarbon contains

a) Hydrogen and any other element

b) Only carbon and hydrogen

c) Carbon, hydrogen and oxygen

d) Carbon and calcium

19. Liquefied petroleum gas is obtained from crude oil by

a) Chromatography

b) Crystallization

c) Distillation

d) Filtration

20. Plasmolysis demonstrates

a) Turgidity in a cell

b) Insufficient intake of water by a cell

c) Absorption of salt solution by a cell.

d) Excessive loss of water from a cell

21. The partitioning of the heart by the septum ensures that.

a) Blood enters the auricle before the ventricle

b) Oxygenated and de-oxygenated by do not mix

c) Blood flows in one direction.

d) Blood moves to all part of the body

22. De-oxygenated blood enters the heart through the

a) right ventricle

b) Left ventricle

c) Right auricle

d) Left auricle

23. The reaction between an acid and a base is known as

a) Esterification

b) Neutralization

c) Saponification

d) Sedimentation

24. Plastics are made by the process called

a) Condensation

b) Crystallization

c) Polymerization

d) Vulcanization

25. A tissue is made up of cells which

a) Perform different

b) Have different structure

c) Have similar structure and function

d) Look alike in shape

26. Compounds of carbon are more abundant in nature than in other compounds of other element's because

a) Carbon has many allotropes

b) Other elements form both covalent and ionic compounds

c) Other elements do not form stable compounds.

d) Carbon forms different types of covalent bonds

27. The largest artery in the human body is the

    a) Aorta

    b) Carotid

    c) Pulmonary artery

    d) Renal artery

28. The movement of water from solution into a strong solution across a semi-permeable membrane illustrates

    a) Capillarity

    b) Diffusion

    c) Osmosis

    d) Plasmolysis

29. Which of the following methods may be used in the preparation of salt?

    a) Coagulation

    b) Filtration

    c) Neutralization

    d) Sublimation

30. Non-biodegradable detergents results in environmental pollution because they

    a) Are not easily broken down by nature.

    b) Are easily emulsified.

    c) React easily with organic substances

    d) Are not water soluble

31. A coin placed at the bottom of a bucket of water appears closer to the surface than it really is. This is due to

    a) Reflection of light

    b) Refraction of light

    c) Dispersion of light

    d) Rectilinear propagation of light

32. Reb blood cells are also referred to as

    a) Erythrocytes.

    b) Leucocytes.

    c) Lymphocytes

    d) Thrombocytes

33. The Which of the following part of the computer is an input device?

    a) The monitor

    b) The plotter

    c) The printer

    d) The scanner

34. Pulmonary circulation involves the movement of blood from the

    a) Heart to the body and back

    b) Heart to the lungs and back

    c) Lungs to the heart and back

    d) Lungs to the body and back.

35. Which of the following petroleum fractions is used in road construct?

    a) Bitumen

    b) Diesel

    c) Heavy oil

d) Naphtha

36. Which of the following materials is used in making domestic water pipes?
    a) Chlorofluoro carbon
    b) Perspex
    c) Polytetra fluoro ethane
    d) Polyvinyl chloride

37. Which of the following is a hydrocarbon?
    a) C_2H_6
    b) $C_6H_{12}O_6$
    c) CH_3CH_2OH
    d) $NaHCO_3$

38. The group of organic compound with the general formula $C_nH_{2+1}COOH$ are called
    a) Alkenes
    b) Alkanoates
    c) Alkanols
    d) Alkanoic acid

39. Asthma is a disorder of the
    a) Respiratory system
    b) Circulatory system
    c) Digestive system
    d) Skeletal system

40. Fractional distillation can be used to produce
    a) Ethanol from palm oil
    b) Kerosene from crude oil
    c) Charcoal from wood

APPENDIX H

Sample of Social Studies Mock Questions

EKUMFI EDUCATION DIRECTORATE

FINAL MOCK EXAMINATION, *2021*

SOCIAL STUDIES (SHS 3) TIME: 2HRS 30MINS.

PAPER 1

OBJECTIVES

ANSWER ALL THE QUESTIONS

*Choose the correct answer from the options lettered **A-D***

1. **The environment consists of**

   A. all living and non-living things B. Plants and animals

   C. rivers and plants D. All water bodies and animals

2. **Rights of citizens of Ghana can be curtailed when there is .....**

   A. a general election B. a national population census

   C. a new government in place D. an outbreak of epidemic

3. **Another name for global warming is**

   A. Ozone layer effect B. Depletion of the ozone layer

   C. Greenhouse effect D. ultra violet rays

4. **One benefit derived from formal education is**

   A. preference for white-collar jobs B. making people less superstitious

C. adoption of western culture D. strengthening of extended family ties

5. **The capabilities of a person are most effectively harnessed through**

A. education B. motivation

C. socialisation D. indoctrination

6. **The feeding relationship that exists amongst living organisms through which energy is passed on from one organism to another is referred to as**

A. ecology B. Energy pyramid

C. food chain D. abiotic

7. **The main weakness of knowledge-based education in Ghana is the inadequate**

A. preparation for leadership B. acquisition of skills

C. acquisition of traditional values D. preparations for family responsibilities

8. **When people are forced to leave their country as a result of conflict, they become**

A. detainees B. dissidents

C. mercenaries D. refugees

9. **Female genital mutilation must be condemned in Ghana mainly because it**

A. creates difficulty getting a partner B. is associated with a particular ethnic group

C. goes against fundamental human rights D. confines the individual to a particular location

10. One positive effect of formal education on the Ghanaian society is the

A. increase in urban population
B. establishment of youth clubs
C. provision of structured curriculum
D. elimination of outmoded cultural practices

11. A girl who maintains her chastity is most likely to

A. become academically successful
B. get a good husband
C. become the most beautiful lady
D. represent her community at important event

12. Which of the following socio-cultural practices dehumanizes the individual?

A. funeral rites
B. widowhood rites
C. celebrating festivals
D. pouring of libation

13. In a society the enjoyment of rights must go with

A. authority
B. privileges
C. considerations
D. responsibilities

14. In which of the following types of education is teaching and learning an unconscious activity?

A. formal education
B. non-formal education
C. moral education
D. informal education

15. The Environmental Protection Agency is a state agency mandated to

A. safeguard the natural environment
B. provide security for the society

C. ensure peace in the society D. ensure that farmers produce safe produce

16. On the 30th December 1994 Environmental Protection Agency was formed. The agency was formally called

A. Environmental Protection Cooperation B. The Agency of Safe Environment

C. Environmental Protection Department D. Environmental Protection Council

17. A natural cause of desertification is

A. Annual bush burning B.dry weather conditions

C. Over-cultivation D. Over-grazing

18. Which of the following best explains the rights of an individual?

A. basic conditions for social justice B. claims to which a person is entitled

C. the ability to live an independent life D. legal, moral and value system

19. The right to vote in society helps

A. individuals to participate in decision-making

B. in the delegation of public duties

C. to hasten economic development

D. to unite ethnic groups

20. A situation where a person hides his/ her true identity and pretends to be what he/she is not is referred to as .....

A. false identity B. false order

C. image hiding D. second image

21. Reproductive health education for adolescents mainly help them to .....

A. cope with their emotional problems
B. increase their physical fitness level
C. increase their social contacts
D. obtain good grades in school

22. Nation-building involves

A. fostering national unity
B. electing people to parliament
C. constructing many public buildings
D. engaging political discussions

23. The principle of self-reliance implies that citizens of a country

A. can exercise their natural rights freely
B. produce what they need locally
C. use modern technology production
D. do not marry foreigners

24. A leader who wields absolute power over his followers is said to be

A. autocratic
B. democratic
C. paternalistic
D. laissez faire

25. The Coat of Arms of Ghana symbolizes the

A. struggle for independence
B. unity of the nation
C. religious diversity of the people
D. past, present and future aspirations of Ghana

26. Formal education in Ghana has made the expected impact on the society because

A. it is too bookish in nature

B. tertiary institutions are too few

C. the period for schooling is too short

D. much emphasis on technical skills

27. The destruction of the vegetation cover contributes to

A.global warming

B.acid rain formation

C.depletion of mineral deposits

D.decrease in the ultraviolet rays

28. Which of the following are rights enjoyed by all Ghanaians?

I. protection of life and property

II. payment of taxes and levies

III. protection of public property

IV. personal liberty

A. I and II only

B. II and III only

C. I and IV only

D. III and IV only

29. Which of the following bodies helps in the conservation of the environment?

A.the Meteorological Service Department

B. Ghana Atomic Energy Commission

C. The Forestry Commission

D. Ghana Standards Board

30. The main aim of education is to .....

A. enable the individual acquire certificates B. enable the individual secure job

C. equip the individual with requisite skills D. prepare the individual to participate in governance

31. The process by which society is transformed to enable it meet new challenges is referred to as

A. education B. empowerment

C. socialization D. social change

32. Irresponsible parenting is on the increase in developing countries due to

A. abject poverty B. illiteracy

C. widowhood D. immigration

33. The most important agents of socialization in the Ghanaian traditional society is the

A. church B. school

C. parents' D. mass media

34. The ozone layer is found in the

A.ionosphere B.mesosphere

C.stratosphere D.atmosphere

35. In the Ghanaian society, it is a duty of the citizen to

A. belong to a religious group B. give charity to the needy

C. join a political party D. protect public property

36. which of these pairs of concepts are regarded as opposite sides of the same coin in a

A. rights and responsibilities B. the judiciary and the executive

C. freedoms and rights D. the government and the presidency

37. For right to be enjoyed by a citizen it must be

A. taught in schools B. supported by the ruling group

C. accepted by all citizens D. enforceable by a court of law

38. A major characteristics of informal education is that .....

A. much of the learning is unsystematic B. it is carried out for people who are in business

C. it is carried out in organised institutions D. it is well structured

39. A state of complete physical, mental and social well-being with regard to the reproductive system is.....

A. adolescent chastity B. adolescent morality

C. reproductive health D. reproductive rights

40. Which of the following factors does not help an individual to develop self-confidence?

A. cultural beliefs B. low satisfaction of needs

C. self-determination D. the type of training

41. The negative aspect of culture has the tendency to .....

A. change society's festivals

B. influence only the illiterate

C. promote urban-rural migration

D. reduce human dignity

42. The type of marriage in which the couple continues to live separately in their own homes

A. duolocal

B. matrilocal

C. neolocal

D. patrilocal

43. The best way of dealing with conflicts in the workplace is through

A. violent demonstration

B. dialogue

C. the use of arms

D. strikes

44. Which of the following cultural elements can bind Ghanaians together?

A. architecture

B. music and dance

C. mode of dressing

D. marriage

45. A family which cares for an abandoned child is known as

A. an extended family

B. a nuclear family

C. a family of procreation

D. an adoptive family

46. A major benefit Ghana derives from trading with other countries is

A. improvement in foreign relations

B. getting aid for disaster victims

C. getting goods which she is unable to produce

D. creating employment avenues for her people

47. The role of an individual in a community includes all the following except

A. volunteering information
B. taking part in communal labour
C. voting elections
D. collection of taxes

48. In order to fully exploit her natural resources, Ghana needs to

A. train more skilled manpower
B. expand her foreign trade
C. reduce the rate of population growth
D. employ more foreign administration

49. The negative aspect of culture has the tendency to .....

A. change society's festivals
B. influence only the illiterate
C. promote urban-rural migration
D. reduce human dignity

50. The immediate outcome of the depletion of the ozone layer is

A. Frequent earthquakes
B.general global warming
C. Rapid desertification
D.atmospheric pollution

SECTION B

ESSAY

Answer *4 (four) questions* in all, choosing at least one question from each section. Each question carries 20 marks.

SECTION A

THE ENVIRONMENT

1. a. Distinguish between marriage and courtship.

   b. Discuss four challenges that confront a married couple in the Ghanaian society.
2. a. Give 4 distinctions between formal and informal education.

   b. Examine four positive effects of formal education on national development.
3. a. what is environmental degradation?

   b. Suggest with relevant examples, any four measures that can be adopted to protect the environment.
4. Why do you think it is important for an individual to know himself or herself? Explain any five reasons to support your answer.

SECTION B

GOVERNANCE, POLITICS AND STABILITY

5. a. State two characteristics of each of the following leadership style

   i. laissez -faire

   ii. democratic

   b. Highlight four roles of a leader in nation building

6. a. With two examples each, distinguish between natural rights and political right.

   b. Describe four conditions under which the right of an individual can be curtailed or violated in a country.

7. a. what is democratic governance?

   b. Highlight four benefits Ghana derives from practicing democratic governance

SECTION C

SOCIAL AND ECONOMIC DEVELOPMENT

8. a. What is community development?

   b. Explain four factors that promote community development.

9. a. what is development?

   b. Explain any four factors that hinders development in Ghana

10. a. Differentiate between science and technology.

    b. Explain any four contributions of science and technology to the agricultural development in Ghana.

APPENDIX I

Reliability of the original instrument for study habits and test anxiety

Variables	Cronbach alpha
Time allocation -related Study Habits	0.79
omework and Assignments-related Study Habits	0.89
Reading and Note-Taking- related Study Habits	0.78
Concentration-related Study Habits	0.81
Time Management-related Study Habits	0.83
Overall Study Habits CA	0.85
Overall test anxiety	0.89

APPENDIX J

Test of Normality