



**THE UNITED REPUBLIC OF TANZANIA  
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY  
THE NATIONAL EXAMINATION COUNCIL OF TANZANIA**



**CANDIDATES' ITEMS RESPONSE ANALYSIS REPORT  
FOR DIPLOMA IN SECONDARY EDUCATION EXAMINATION  
(DSEE) 2020**

**738 INFORMATION AND COMMUNICATION TECHNOLOGY**



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## **738 INFORMATION AND COMMUNICATION TECHNOLOGY**

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## FOREWORD

The National Examinations Council of Tanzania is pleased to issue the report on Candidates' Item Response Analysis (CIRA) in Information and Communication Technology (ICT) subject for the year 2020. The purpose of this report is to inform teachers, parents, policy makers and other education stakeholders on how the candidates responded to the examination questions. The report will enable the stakeholders especially tutors to identify the topics which need more emphasis in the teaching and learning process and take appropriate measures in order to improve the performance of candidates.

The analysis presented in this report is intended to contribute towards understanding the reasons behind the performance of candidates in the examination. The report highlights the factors behind the candidates' responses to the examination questions. The analysis reveals that candidates who performed well were able to provide appropriate responses because they had adequate knowledge on the subject content. Also they were able to identify appropriately the requirements of the questions. The report also highlights the reasons that made some candidates fail to score high marks. Such factors include failure to identify the demand of the questions, inability of expressing themselves in English language as well as lack of knowledge on the tested concepts.

The National Examinations Council of Tanzania believes that education stakeholders will take proper measures to overcome the identified challenges in order to improve the candidates' performance in this subject in future examinations.

Finally, the Council would like to thank all the Examination Officers, Examiners and all stakeholders who participated in the preparation and dissemination of this report.



Dr. Charles E. Msonde  
**EXECUTIVE SECRETARY**

## **1.0 INTRODUCTION**

This report analyses candidates' item responses for Diploma in Secondary Education Examination in Information and Communication Technology (ICT) subject for the year 2020. The paper was set according to the 2009 Information and Communication Technology syllabus for Diploma in Secondary Education.

The number of candidates who sat for this examination in 2020 was 2,769, out of which 99.38 percent passed the examination and 0.62 percent failed. In 2019, a total of 3,074 candidates sat for the examination of which 99.84 percent passed and 0.16 percent failed. Therefore, the performance of candidates has decreased by 0.46 percent.

The paper consisted of 3 sections, A, B and C with a total of 16 questions. Section A consisted of 10 short answer questions each allotted carried 4 marks. Section B had 3 optional questions each carrying 15 marks. Section C had 3 optional questions each carrying 15 marks. The candidates were required to answer all questions in section A, 2 questions from section B and 2 questions from section C making a total of 14 questions.

The candidates' performance in each question or topic is regarded as good if 40 percent of candidates or more scored from 70 to 100 marks, average if the scores range from 40 to 69 and poor if the scores range from 0 to 39. In this report, the candidates' performance is also presented in different charts and tables by using colours whereby the red colour represents poor performance, yellow represents average performance and green shows a good performance.

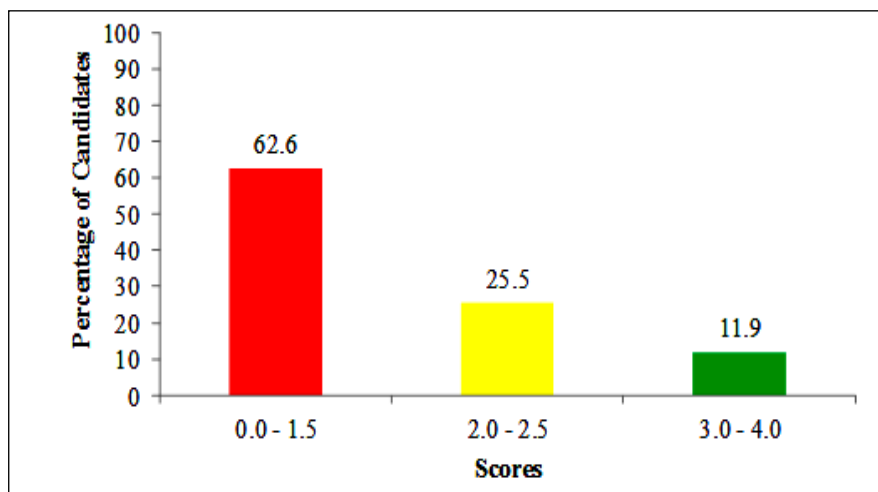
The analysis of candidates' responses shows the requirements of each question, what the candidates were able to do, and the challenges they encountered in answering the given questions. Samples of extracts for good and poor responses from the candidates are given to elaborate the stated cases. Lastly, the report ends with a conclusion and recommendations.

## 2.0 ANALYSIS OF THE CANDIDATES' PERFORMANCE IN EACH QUESTION

### 2.1 Question 1: Generic Software Applications

The question required the candidate to explain why electronic mails are mostly preferred than traditional mails in sending a message, by giving four reasons. This question intended to measure the candidates' knowledge on the differences between electronic and traditional mails.

A total of 2,732 (99.3%) candidates attempted this question, out of which 1,711 (62.6%) scored from 0 to 1.5 marks, 695 (25.5%) scored from 2 to 2.5 marks and 326 (11.9%) scored from 3 to 4 out of 4 allocated marks. The statistics shows that the candidates' performance in this question was poor because only 37.4 percent scored above 1.5 marks. Figure 1 shows the summary of candidates' performance in this question.



**Figure 1:** *The candidates' performance in question 1.*

The statistics shows that most of the candidates (62.6%) who scored low marks misunderstood the requirements of the question. The candidates in this group provided various incorrect reasons. For instance, one of the candidates wrote, “it is easy, electronic mails are sent in one minute, and it does not counter barriers”. Another

candidate wrote, “It can avoid biasness, electronic mail does not store by external force”. Other candidates in this category wrote the advantages of modern means of communication over traditional means of communication. Extract 1.1 shows a sample of an incorrect response from one of the candidates.

i)	Because it is used to transfer the knowledge with	
ii)	ut selective	
iii)	Because it is shared by all people in the	
	society	
iv)	Because it is used from our old rather period	

Extract 1.1: Candidates’ incorrect response in question 1.

In Extract 1.1 the candidate wrote general application of electronic mail in daily life instead of giving the advantages of electronic mail over traditional mails in sending messages.

Moreover, the analysis of data indicates that, 11.9 percent of candidates who scored 3 to 4 out of the 4 allocated marks were able to give the advantages of electronic mail over traditional mail with some of them (3.9%) scoring full marks. Some of the candidates did not score full marks because of some grammatical errors, while others provided only three correct reason. Extract 1.2 shows a sample of a correct response from one of the candidates.

1	① Electronic mail provides and send message quickly	
	compared to traditional mail	
	② Preparation of message in electronic mail is very	
	faster than on using traditional mail	
	③ It is easy to send message to many users by	
	using electronic mail compared of traditional mail.	

Extract 1.2: one of the correct responses from a candidate whose responses were good.

In Extract 1.2 the candidate provided four correct reasons which influence people to prefer electronic over traditional mails.

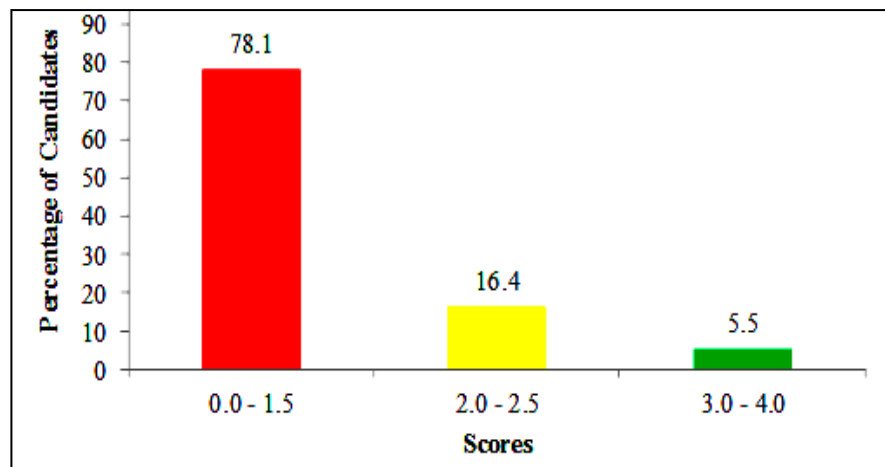


Moreover, the statistics show that 695 (25.5%) candidates who had average marks (2.0 to 2.5) were able to give 2 to 3 correct out of 4 required reasons. Other candidates in this category scored average marks because they failed state the reasons clearly due to lack of competence in English language.

## 2.2 Question 2: Computer Basics and Networks

In this question the candidates were required to distinguish internal storage of a computer from external storage devices by giving two points.

A total of 2,719 (98.8%) candidates attempted this question, out of which 2,124 (78.1%) scored from 0 to 1.5 marks, 445 (16.4%) scored from 2.0 to 2.5 marks and 150 (5.5%) scored from 3 to 4 out of 4 marks. The data shows that the candidates' performance in this question was poor, because 21.9 percent scored above 1.5 marks. Figure 2 shows the summary of candidates' performance in this question.



**Figure 2:** *The candidates' performance in question 2.*

On the other hand, the candidates who scored low marks (0 to 1.5) lacked knowledge on the differences between internal storage of the computer and external storage devices. Some candidates in this

category had misconception regarding the computer hardware and computer software. For example, one candidate wrote, “internal storage of a computer is monitor and printer as examples of external storage devices”. Another one wrote, “External memory is used as temporary memory, it is also called random access memory” which are incorrect responses. Extract 2.1 shows an example of an incorrect response from one of the candidates in this question.

Q.2	Internal storage of computer there software	
	while external storage of computer there are	
	hardware.	
2.	Internal storage of computer there presence of	
	input devices while in external storage there	
	output devices.	

Extract 2.1: One of the candidate’s incorrect response in question 2.

In Extract 2.1 the candidate described wrongly the internal storage and external storage devices in relation to software and hardware. These responses imply that, the candidates had limited knowledge on storage devices of a computer.

The analysis of data shows that most candidates (5.5%) who scored 3 to 4 were able to distinguish internal storage of a computer from external storage devices. These candidates had adequate knowledge on storage devices of a computer. Some of the candidate (0.2%) in this group scored full marks while others could not because they cited incorrect examples. Extract 2.2 shows a sample of a correct response from one of the candidates.

2.(i)-Internal Storage refer to the storage system within	
a Computer WHILE External Storage system are -	
Placed or attached to the Computer.	
ii)- Internal Storage of Computer includes Random,	
Access Memory (RAM) and ROM while.	
External Storage of Computer involves the	
Use of Memory cards, flash disks and adapters.	

Extract 2.2: Candidate's correct response in question 2.

In Extract 2.2 the candidate provided clear differences between the internal and external storage devices of a computer. The candidate explained briefly each kind of storage according to the demand of the question.

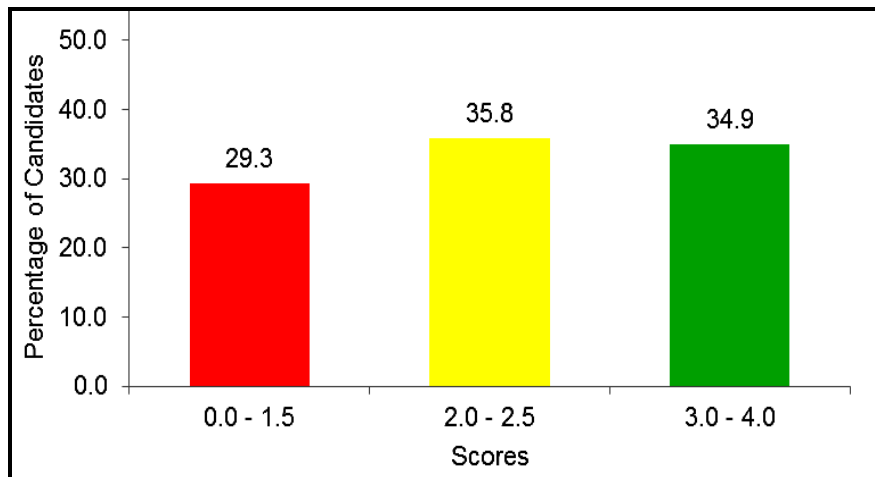
In addition, the statistics show that 16.4 percent of the candidates, who had average marks (2 to 2.5), managed to provide correct descriptions on external storage devices but could not do so on internal storage of the computer. It was also observed that some candidates mixed examples of internal storage of a computer with external storage devices. Such responses signify that, the candidates had partial knowledge regarding the internal storage of a computer and external storage devices.

### 2.3 Question 3: Socio-Economic and Cultural Aspects of ICT

In this question the candidates were asked to describe four applications of ICT in the education sector. The candidates were expected to demonstrate their knowledge on the applications of ICT in the education Sector.

A total of 2,738 (99.5%) candidates attempted this question, out of which 803 (29.3%) scored from 0 to 1.5 marks, 976 (35.8%) scored from 2.0 to 2.5 marks and 953 (34.9%) scored from 3 to 4 out of 4 allocated marks. The statistics show that, the candidates' performance in this question was good because 70.7 percent scored

above 1.5 marks. Figure 3 shows the summary of candidates' performance in this question.



**Figure 3:** *The candidates' performance in question 3.*

The statistics shows that 34.9 percent of the candidates who scored high marks (3 to 4) were able to describe the applications of information and communications technology in the education sector. This implies that, they had adequate knowledge on application of ICT in education sector. However, some candidates did not score full marks because they could not describe them clearly. Extract 3.1 shows a sample of a correct response from one of the candidates.

3.	(i) It is used in teaching and learning through projectors. Teacher can conduct the lecture presentation through projector and deliver the knowledge to learners.	
	(ii) It is used by learners to search and downloading the materials for studying.	
	(iii) It is applicable in storing students record through computers in the Database.	
	(iv) It is used in printing scanning and typing examinations and certificates in educational processes.	

Extract 3.1: A correct response of a candidate who described well the application of ICT in the education sector correctly.

Extract 3.1 shows that, the candidates described the application of information and communication technology in the education sectors correctly by giving four points.

Further analysis of data shows that 35.8 percent of the candidates who scored average marks (2 to 2.5) were able to describe three applications of ICT in education sector while others in this category were able to describe three applications with some grammatical errors.

On the other hand, 29.3 percent of the candidates who scored low marks were able to describe one or two ways in which ICT is applied in the education sector. They lacked knowledge on the application of ICT in education. For instance, one candidate wrote, "It helps to create documents, help in clarification of difficult concept by using projector". In addition, some of these candidates did not understand the requirements of the question. Some of them described the applications of ICT in the society in general while others listed examples of application software such Ms Word, Ms Excel and other programmes. For example, one of the candidates outlined, "database application, spreadsheet application and presentation application," as application of ICT in education sector.

Extract 3.2 shows a sample of incorrect response from one of the candidates.

3	i) Computer	
	ii) Telephone	
	iii) Satelaity	
	iv) Radio	

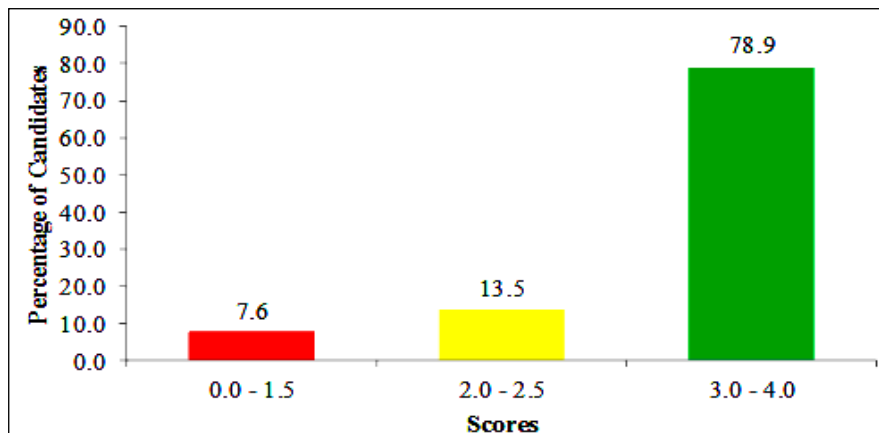
Extract 3.2: A response of a candidate who answered question 3 incorrectly.

In Extract 3.2 the candidate listed some of the devices which are used in communication of information instead of giving the applications of ICT in the education sector.

## 2.4 Question 4: Computer Basics and Networks

This question consisted of two parts, (a) and (b). In part (a), the candidates were required to describe briefly the importance of computer hardware, and in part (b) the candidates were required to describe briefly the importance of computer software.

A total of 2,731 (99.2%) candidates attempted this question, out of which 207 (7.6%) scored from 0 to 1.5 marks, 369 (13.5%) scored from 2.0 to 2.5 marks and 2,155 (78.9%) scored from 3 to 4 out of the 4 allocated marks. The data shows that the candidates' performance in this question was good, because 92.4 per cent of the candidates scored above 1.5 marks. Figure 3 shows the candidates performance in in question 4.



**Figure 4:** *The candidates' performance in question 4.*

Most of the candidates (78.9%) who scored high marks (3 to 4) described correctly the importance of computer hardware in part (a), and the importance of computer software in part (b). For example, in part (a) one of the candidates wrote, “Computer hardware helps in assisting the computer in several functions like inputting data, processing data, giving out information and storing data”. Another candidate in part (b), wrote, “Computer software helps in providing instructions on what the computer should do”. However, some candidates (15.9%) in this category could not score full marks because they mixed up the concepts of computer hardware and software. For example, one candidate wrote, “computer software as the brain of part (CPU) to operate the system of a computer”. Extract 4.1 shows a sample of a correct response from one of the candidates who attempted this question.

4	<p>(a) Computer hardware are all <del>de</del>physical devices which can be used in a computer. such as it can be output, input or storage devices such as printers, screen, mouse, memory devices and speakers.</p> <p>(b) Computer <sup>software</sup> <del>hardware</del> are all programs which can be used to run a computer. It can be system software or <del>for</del> application software. It helps to run different activities performed by a computer. Example Micro-soft excell, anti-virus and</p>	
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Extract 4.1: A correct response from one of the candidates.

In Extract 4.1, the candidate managed to describe the importance of computer hardware and software.

On the other hand, the responses of the candidates who scored low marks (0 to 1.5) showed that they had insufficient knowledge on computer hardware and computer software. For example, one candidate wrote, “function of computer hardware is to control the antivirus in the computer while the function of computer software is to help in typing a work in the computer”. Other candidates in this category confused the term hardcopy with computer hardware. For example, one candidate wrote “Computer hardware is the printed material from the computer”. Extract 4.2 shows an example of an incorrect response from one of the candidates in this question.

4	<p>(a) Computer hardware</p> <p>① It deal with -e</p> <p>② It help to know how to enter the raw data in the computer system.</p> <p>③ Also it help to know how to display<sup>out</sup> the information</p> <p>(b) Computer software</p> <p>① It help to know how the computer work performing the task.</p>	
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Extract 4.2: A sample of responses from a candidate who responded question 4 wrongly.

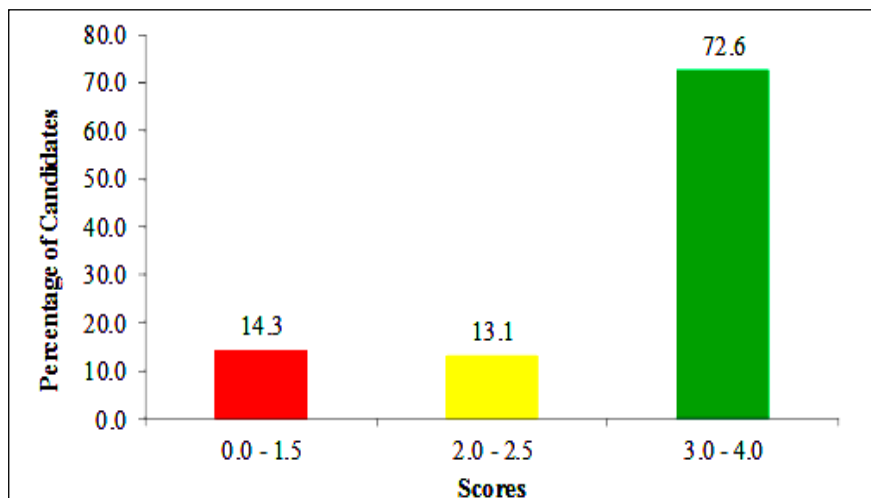


In Extract 4.2, the candidate provided incorrect response for the functions of (a) computer hardware, and (b) function of computer software. This implies that the candidate lacked knowledge of computer software and hardware.

## 2.5 Question 5: Generic Application Software

In this question, the candidates were asked to differentiate electronic database from traditional database.

A total of 2,638 (95.9%) candidates attempted this question, out of which 376 (14.3%) scored from 0 to 1.5 marks, 346 (13.1%) scored from 2.0 to 2.5 marks and 1,916 (72.6 %) scored from 3.0 to 4.0 out of 4 allocated marks. The data shows that the candidates' performance in this question was good, because 85.7 percent scored above 1.5 marks. Figure 5 shows the candidates' performance in this question.



**Figure 5:** *Candidates' performance in question 5.*

The statistics show that the candidates who scored high marks (3 to 4) gave a clear distinction between electronic database and traditional database with 52.9 percent scoring full marks. The candidates in this category who could not score full marks had

grammatical errors in their descriptions. This indicates that the candidate had adequate knowledge on the concept of database. Extract 5.1 shows a sample of response from a candidate who answered this question correctly.

5	a) electronic database done electronically	
	while	
	- traditional database done traditionally	
	b) electronic database are modern	
	while	
	- traditional database are traditionally.	
	c) - electronic database are easy to	
	update information while	
	- traditional database is not easy to	
	update information.	
	d) - electronic database are very expensive	
	while	
	- traditional database are less expensive	
	rather than electronic database.	

Extract 5.1: Candidate's correct response in question 5.

Extract 5.1 shows that, the candidate managed to differentiate electronic database from traditional database clearly by providing four differences between the two concepts.

On the other hand, 14.3 percent of the candidates who scored low marks (0 to 1.5) had insufficient knowledge on databases. For example, one candidate wrote that, "electronic database consumes electricity only and traditional database involves manual activities". Another candidate wrote, "Electronic database can be used to calculate mathematics while traditional database cannot calculate mathematics". Extract 5.2 shows an example of incorrect response from one of the candidates in this question.

5.	Electronic data base: These are the -	
	system software used to create -	
	pages in the computer while the -	
	traditional database they can not -	
	create any page.	

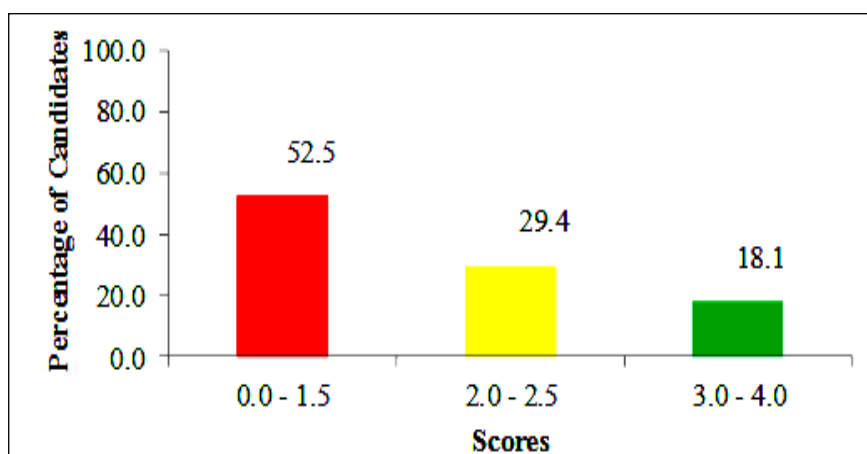
Extract 5.2: A sample of a response from a candidate who could not differentiate electronic mail from traditional mail.

In Extract 5.2, the candidate described the electronic and traditional database incorrectly by relating to creation of tables. This indicates that the candidates had lacked knowledge on traditional and electronic databases.

## 2.6 Question 6: Computer Laboratory Management Skills

In this question the candidates were asked as follows: *Explain how students can cause damage in a computer laboratory?*

A total of 2,733 (99.3%) candidates attempted this question, out of which 1,435 (52.5%) scored from 0 to 1.5 marks, 804 (29.4%) scored from 2 to 2.5 marks and 494 (18.1%) scored from 3 to 4 marks out of 4 allocated marks. The candidates' performance in this question was average, because 47.5 percent scored above 1.5 marks. Figure 6 shows the summary of candidates' performance in this question.



**Figure 6:** *The candidates' performance in question 6.*

Most of the candidates who scored high marks (3 to 4) responded to the question according to the expected demands. The responses indicated that they had adequate knowledge on the causes of damages in a computer laboratory. Extract 6.1 shows a sample of correct responses provided by one of the candidates.

06	The causes of damage in a computer laboratory.
i)	To direct computer to the sunlight.
ii)	To remove computer from one place to another without caring well computer.
iii)	Through mixing cable it can cause damage.
iv)	Through drinking and eating in the laboratory computer can cause damage.

**Extract 6.1:** Candidate's correct response in question 6.

In Extract 6.1 the candidate who managed to explain briefly the ways in which the students can cause damage in the computer laboratory. Most of the candidates (16.2%) in this group could not score full marks because they explained three points while others provided unclear descriptions. In addition, the candidates who could not score full marks outlined the causes of damage in the laboratory instead of explaining them in brief.

On the other hand, candidates who scored low marks (0 to 1.5) did not meet the requirements of the question. For example one candidate wrote, “inadequate computer laboratory: Also this it can lead many number of students fail to use computer”. Some of the candidates in this category outlined laboratory rules in general instead of the ways a student can cause damage in a laboratory. Extract 6.2 shows an example of an incorrect response from one of the candidates who who responded this question incorrectly.

6.	i). By sharing file or data between computer and laptop.	
	ii). E-mail attachment	
	iii). Modification of data or file	
	iv). Denial Services	

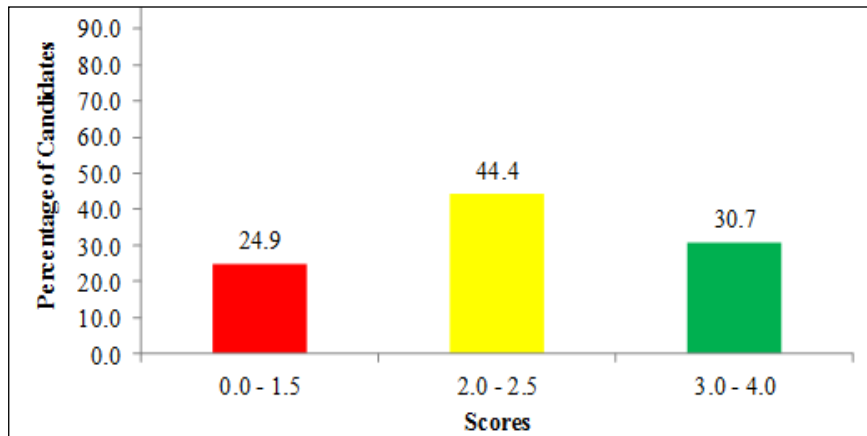
Extract 6.2: One of the candidate’s incorrect responses in question 6.

In Extract 6.2 the candidate incorrectly mentioned some activities which can cause damage in the computer laboratory. The candidate wrote activities such as sharing files, attaching documents in e-mails, modification of data and denial services which were false.

## 2.7 Question 7: Computer Basics and Networks

The question asked as follows: *Computers can cause health problems to users. Explain four health problems and their prevention methods.* In this question, the candidates were expected to demonstrate the knowledge of health problems caused by computers as well as the measures used in preventing them.

A total of 2,701 (98.1%) candidates attempted this question, out of which 673 (24.9%) scored from 0 to 1.5 marks, 1,200 (44.4%) scored from 2.0 to 2.5 marks and 828 (30.7%) scored from 3 to 4 marks out of 4 allocated marks. The candidates’ performance in this question was good, because 75.1 percent managed to score above 1.5 marks. Figure 7 shows the summary of candidates’ performance in this question.



**Figure 7:** *The candidates' performance in question 7.*

The analysis of data shows that most of candidates (75.1%) who scored 3 to 4 managed to explain the health problems caused by computers and their methods form prevention. Some of them (4.1%) scored full marks while others could not. The candidates who could not score full marks were able to mention the problems but could not explain the respective methods for prevention. Other candidates in this category managed to outline three appropriate problems without descriptions. Extract 7.1 shows a sample of a response from a candidate who managed to answer this question correctly.

7	<p>6 Problem eye sight, through using the computer which have a high light can cause the sight problem. So the user must be reduce the light of the computer when using.</p> <p>ii Ear problem, Also the use of computer can cause the problem of ear if the sound large or high. So the user must be reduce the sound when using the computer.</p> <p>iii Headache, Also if the user concentrate on using a computer for a long time without rest can also lead headache. So the user must be use for a short time by allowing the time of rest.</p> <p>iv Painfull of the part of the body for example hands.</p>	
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Extract 7.1: Candidate's correct response in question 7.

In Extract 7.1 the candidate mentioned the problems such as sight problem, ear malfunctioning, body pains and headache as caused by computers, and was able to describe them accordingly.

On the other hand, most of the candidates who scored low marks did not meet the requirement of the question. For instance, one candidate wrote, "Headache, heartbeats, pressure and sight", without any descriptions. Other candidates in this category wrote the negative impacts of ICT in the society instead of health problems caused by computers. For example, one candidate wrote, "Using WhatsApp in the computer and using you tube and Facebook leads to health problems". Another candidate wrote, "Normal human fever". Extract 7.2 is an example of an incorrect response from one of the candidates.

7.	1) Network problem	
	ii) Outbreak of the problem in the room	
	iii) Shortage of electricity	
	iv) Shortage of space in the room	
	Prevention method	
	i) Enough space in the room	
	ii) Lighting	
	iii) Power / ventilation installation	
	iv) Ventilation in the room.	

Extract 7.2: A response of a candidate who wrote incorrect answer in question 7.

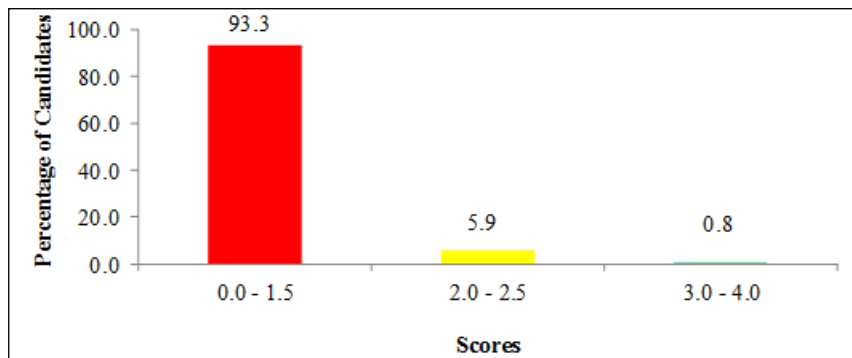
In Extract 7.2 the candidate wrote the problems which can hinder the use of the computer laboratory and their solution. However, this was not the requirement of the question.

## 2.8 Question 8: Computer Basics and Networks

This question had two parts; (a) and (b). In part (a) the candidates were required to write the advantages of using peer-to-peer network while in part (b) they were required to write the advantages of using client-server network. The question aimed to assess the candidates' knowledge on the types of computer network architectures.

A total of 2,382 (86.6%) candidates attempted this question, out of which 2,223 (93.3%) scored from 0 to 1.5 marks, 141 (5.9%) scored from 2.0 to 2.5 marks and 28 (0.8%) scored from 3 to 4 marks out of 4 allocated marks. The data shows that the candidates' performance in this question was poor, because 6.7 percent scored 2 to 4 marks. Figure 8 shows the candidates' performance in this question.





**Figure 8:** *The candidates' performance in question 8.*

The majority of the candidates (93.3%) scored low marks (0 to 1.5) because they lacked knowledge on computer network architecture. For instance, one candidate in this category wrote, “peer-to-peer increase vocabularies”. Another candidate wrote, “Peer to peer is very important because it serves a big number of users in short time, encourages socialization and relationship”. Some of these candidates in this category wrote advantages of internet instead of writing the advantages of peer-to-peer network. These responses indicate that candidate had insufficient knowledge on types of computer network architecture. An example of incorrect response is shown in Extract 8.1.

8.	(A) Advantages of using peer-to-peer computer network architecture is to increase the internet accessibility among the computers shared.	
	(ii) Also reduce the cost to the users.	
	(B) Advantages of Client-Server Computer network architecture	
	(i) Help to execute the programs easily	
	(ii) Help to provide various information from client to server and from server to client.	1

Extract 8.1: A sample of a response from a candidate who provided an incorrect answer.

In Extract 8.1, the candidate described internet accessibility and reduction of cost as advantages of peer-to-peer computer network, which is wrong. Moreover, the candidate explained the advantages of client-server computer network architecture as providing help to execute programmes and provision of information to clients which are also incorrect.

Further analysis indicates that very few candidates (0.8%) scored from 3 to 4 marks. This implies that only few candidates had adequate knowledge on types of computer architecture. Moreover, some of the candidates (5.9%) scored averagely, because they could not state clearly the advantages of client-server network. Extract 8.2 shows a sample of a correct response from one of the candidates in this category.

8	(a) Peer-to-peer network architecture is the network model by which all computers in the network are equal and sharing resources equally.	
	Advantages of peer-to-peer	
	(i) Equal sharing of resources.	
	(ii) Failure of one computer do not affect other computers to function.	
	(b) Client-server is the computer network model whereby one powerful computer called server responds request from client computer/work station connected to server computer.	
	Advantages of client-server	
	(i) Transmission of information is high speed than peer to peer.	
	(ii) The model connects many computers via one computer server.	

Extract 8.2: A correct response in question 8 from one of the candidates.

In Extract 8.2, the candidates explained clearly two advantages of peer-to-peer architecture and two client-server architecture.

## 2.9 Question 9: Website Design and Development

This question asked as follows: *Write the HTML codes to create a webpage showing the following information:*

- (a) *Page title: Website Design*
- (b) *Heading 1: Ministry of Education Science and Technology.*
- (c) *One paragraph carrying the following information: “The ministry of Education, Science and Technology head office has shifted from Dar es Salaam to Dodoma”.*

This question intended to assess the candidates’ ability to create a webpage. In this question, the candidates were required to write the HTML codes to create a webpage which displays a page title, headings and one paragraph.

A total of 1,428 (51.9%) candidates attempted this question, out of which 1,397 (97.8%) scored from 0 to 1.5 marks, 12 (0.9%) scored from 2.0 to 2.5 marks and 19 (1.3%) scored from 3 to 4 marks out of 4 allocated marks. The data shows that the candidates’ performance in this question was poor, because only 2.2 percent of the candidates scored above 1.5 as shown in figure 8.

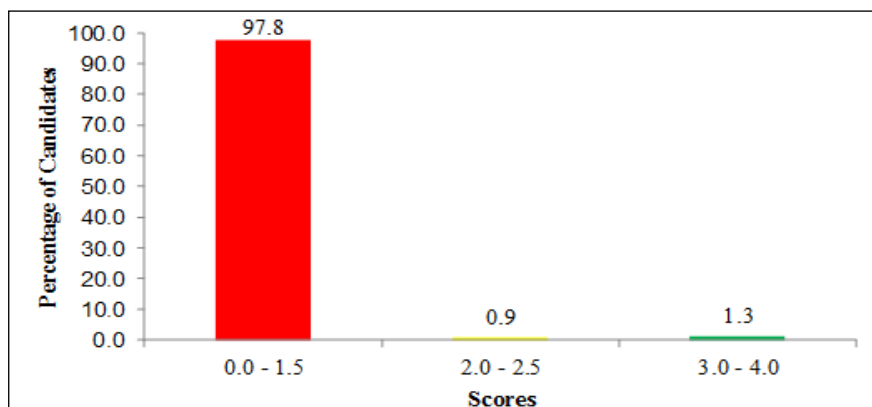


Figure 9: *The candidates’ performance in question 9.*

On the other hand, the responses of candidate who scored low marks (0 to 1.5) wrote answers that were not related to the demands of the question. Others managed to write the code for opening and closing HTML tags but could not write codes for title and paragraph. For instance one candidate wrote,

“<HTML>

<Website Design/>

< Ministry of Education Science and Technology />

The Ministry of Education Science and Technology head office has shifted from Dar-es-Salaam to Dodoma/>

</HTML>”.

The candidates’ responses in this category show that, they had insufficient knowledge on writing HTML codes. Some of them copied the instructions from the questions as the answer. Other candidates in this category confused the concept of webpage with website. For instance, one candidate wrote, “https://www.google.com, www@ministry of education and vocational training and https://www.yahoo.com” which are all incorrect responses. Extract 9.1 shows an incorrect response from one of the candidates in this category.

9.	(a) The google chrom website is main source of information .	
	(b) The ministry of education and science technology propose the <del>can</del> about curriculum change .	
	(iii) The head office of science and technology has shifted from Dar es salaam to Dodoma as a ministry of education decide,	

Extract 9.1: A sample of a poor response from one of the candidates who responded to this question wrongly.

Extract 9.1 shows that, the candidate explained on the roles of Google search engine, Ministry of Education, Science and Technology instead of website design. This indicates that these candidate lacked knowledge on website designing especially the application of HTML.

Further analysis of data shows that, the candidates (0.9%) who scored average marks (2 to 2.5) managed to write the codes for opening and closing HTML tag and title, but could not write codes for some of the parts. For instance one candidate wrote, “The web page can be created by using HTML codes as shown below;

“<HTML> <HEAD>  
 <TITTLE>Website Design</TITTLE>  
 <H<sub>1</sub>>Ministry of Education Science and Technology </H>  
 <P> The Ministry of Education Science and Technology head office has shifted from Dar-es-Salaam to Dodoma </P>  
 </BODY> </HTML>”

The candidates who scored high marks (3 to 4) in this question were able to write the required HTML codes. There were only 5 (0.2%) candidates who managed to score full marks in this question. Extract 9.2 shows a sample of a response from a candidate who answered the question correctly.

9	HTML codes to create new webpage.	
	<HTML>	
	<HEAD>	
(a)	<Title> Website design </title>	
	</HEAD>	
	<BODY>	
(b)	<H<sub>1</sub>> Ministry of Education science and technology</H<sub>1</sub>>	
(c)	<P> The Ministry of Education, science and Technology head office has shifted from Dar es salaam to Dodoma</P>	
	</BODY>	
	</HTML>	

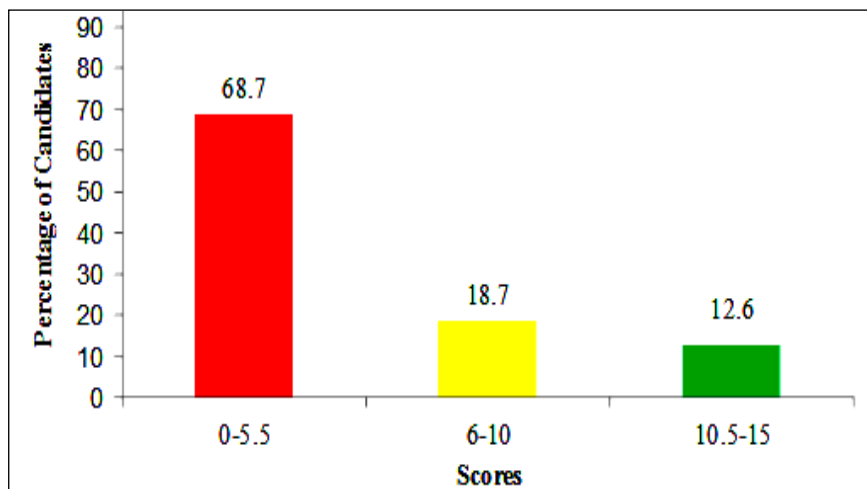
Extract 9.2: A sample of a response from a candidate who managed to write the required codes.

In Extract 9.2 the candidate wrote correctly all codes that were required in order to display the given information. This means that, a few candidates had adequate knowledge on Webpage design especially on the application of HTML codes.

## 2.10 Question 10: Generic Application Software

The question consisted of two parts, (a) and (b) where the candidates were given pairs of activities in which are done in application software so as to differentiate them. In part (a) the candidates were required to differentiate “Selecting a text” from “Cutting a text”. In part (b), the candidates were required to differentiate “Copying a text” from “Pasting a text”.

A total of 2,470 (89.8 %) candidates attempted this question, out of which 1,698 (68.7%) scored from 0 to 1.5 marks, 461 (18.7%) scored from 2.0 to 2.5 marks and 311 (12.6 %) scored from 3 to 4 marks out of 4 allocated marks. The data shows that the candidates’ performance in this question was poor, because only 31.3 percent of the candidates scored above 1.5 marks. Figure 10 shows the summary of candidates’ performance on this question.



**Figure 10:** *The candidates' performance in question 10.*

On the other hand, the candidates who scored low marks (0 to 1.5) misunderstood the requirement of the question, while others just copied the same words given in the question. For example, one candidate wrote, “copying a text is a program in a computer which copying a text while pasting a text is a program which past a text from copying a text”. Other candidates in this category confused the application software and programming languages. Extract 10.1 shows an example of incorrect response from one of the candidates in this category.

10	a) selecting text	
	thru is the work of language translator	
	where by the text is been selected from a given paragraph	
	and being interpreted	
	while	
	cutting text it is done by language translator	
	where by the text is being deleted totally from the	
	paragraph given	
	b) copying text This is done by the language	
	translator on the side of computer where by the text	
	is being printed again while having the same structure	
	remembers but their differ in content	
	while	
	Pasting a text is the way of copying a text on	
	the way it is to another spreadsheet	

Extract 10.1: An incorrect response in question 10 from a candidate.

In Extract 10.1 the candidate wrote about programming language instead of differentiating “Selecting from Cutting a text” or “Copying from Pasting a text”.

Moreover, candidates who scored average marks (2 to 2.5) managed to describe one out of the two parts which were supposed to be differentiated. For example, one candidate wrote, “copying a text is the process of transferring a text from one source to another source

while pasting a text is the process of saving a text to another file permanently”.

The candidates who scored high marks (3 to 4) managed to differentiate “Selecting a text” from “Cutting a text” as well as “Copying a text” from “Pasting a text”. However, some candidates in this category could not score full marks grammatical errors. Extract 10.2 shows a sample of a correct response from one of the candidates who attempted this question.

10:	Differentiate:	
①	Selecting a text and cutting a text.	
	Selecting a text is the situation where a user	
	can mark (highlight) a text while	
	cutting a text is the situation where a user	
	need to remove and put in another location with	
	the computer.	
②	Copying a text: and Pasting a text.	
	Copying a text: is the process where a computer	
	user take a message for the aim of reproducing in a	
	second destination	
	Pasting a text: is the process where a user	
	reproduce a similar message that copied from one	
	source to another.	

Extract 10.2: A sample of a correct response in question 10.

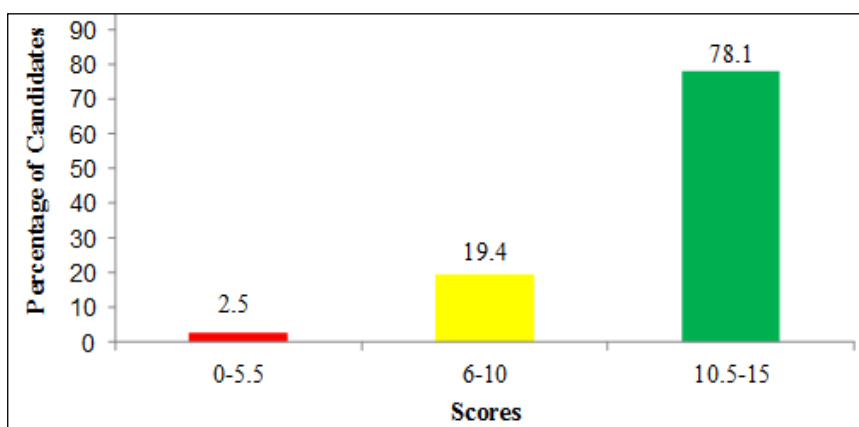
In Extract 10.2 the candidate managed to provide correct differences between “selecting a text” and “cutting a text”. Furthermore, the candidate was able to differentiate correctly the activity of “copying a text” from “pasting text”.



## 2.11 Question 11: Multimedia

In this question the candidates were required to explain the importance of using Multimedia in teaching and learning process in secondary schools. They were asked to use five points in the descriptions.

A total of 2,670 (97.0%) candidates attempted this question, out of which 67 (2.5%) scored from 0 to 5.5 marks, 517 (19.4%) scored from 6 to 10.0 marks and 2,086 (78.1%) scored from 10.5 to 15.0 marks out of 15 allocated marks. The data shows that the general candidates' performance in this question was good, because 97.5 percent of the candidates scored above 5.5 marks. The summary of candidates general performance is shown in Figure 11.



**Figure 11:** *The candidates' performance in question 11.*

The analysis shows that the candidates who scored high marks (10.5 to 15.0) managed to explain correctly the importance of using multimedia in teaching and learning process with appropriate examples. Nevertheless, some of the candidates in this category could not score full marks due to various reasons such as inappropriate organization of ideas and lack of appropriate examples while others explained less than five points. Extract 11.1 shows a sample of a correct response from one of the candidates in this category.

11. Multi-Media is the combination of different element of Media such as text graphic sound, pictures, video which are used in process of teaching and learning, example of Media which contain Multi-Media are Audio-visual. Multi-Media are very important in

process of teaching and learning secondary schools due to the following points.  
Through the use of Multi-Media student are motivated. Example use of Audio-visual the student are seen the picture and hearing the sound which make them to use more than one sense organs, which attract them to listen and in the other hand pay attention on the what teacher presented. So the use of Multi-Media it rose motivation to the learner. Example the use Moving picture Cartoons, graphic,

11. Multi-Media is not selective. Because it involve more than one sense organ for those who have hearing problems they understand through looking the picture and those who are not seen they use different sense organ like hearing the use of Multi-media are very important especially in the student/learner who have different problems.  
Multi-Media it rose attention of the learner. Through the use of different pictures cartoons and even song the student are interested and be pay attention who what teacher say or presented and in the other hand the student are interested through the different animation so the use of Multi-Media are very important especially in the process of teaching and learning process.

	Mult-Media simplify whole process	
	of teaching and learning. The teacher use	
	few time to elaborate the concept because	
	use Mult-Media to present the lesson	
	so student are understand faster rather than	
	using one Media which contain one	
	sense organ. so the use of picture photograph	
	text is simplify the process of teach	
	ing and learning in the classroom.	
	However The use of Mult-Media	
	are play bigger role in whole process	
	of teaching and learning especially for the Sep	
	ndary schools, so the teacher better used	

Extract 11.1: A sample of a response from a candidate who managed to respond question 11 correctly.

In Extract 11.1, the candidate explained correctly the importance of multimedia in the teaching and learning process. The candidates stated the importance of Multimedia referring to students' motivation, attention, retention as well as using multiple sense organs in the learning process.

Moreover, the analysis indicate that some of the candidates who scored average marks were able to write five or less points without explaining them, some of them gave partial answers.

On the other hand, few candidates (2.5%) scored low marks. These lacked essay writing skills. They simply outlined one to three points instead of five. Other candidates in this category managed to write good introduction but they explained elements of multimedia instead of the importance of multimedia. Extract 11.2 shows the sample of an incorrect response from one of the candidate.

11.	<p>Multimedia refers to the combination of text, audio, picture, image, animation, charts in the process of teaching and learning process. There are two types of multimedia this includes Linear-multimedia and non-Linear multimedia all of this used in during the process of teaching and learning process. The following are the importance of multimedia in teaching and learning process includes as:-</p> <p>It is used in business process, The knowledge of the multimedia can be used in business for process money, counting money and storing of the money during conducted business of home.</p> <p>It is used in Police, This means this knowledge of multimedia can be used in police to - detect the finger printer of thieves due to this - knowledge the police offer make easy to detect thieves by detecting the finger printer.</p> <p>It is used in medical, The knowledge of multimedia can be used by the professional Dr to verify the content of the victims of various diseases during the process of teaching and learning process hence this knowledge to predict the sample of the blood of the patient.</p> <p>Therefore multimedia are important since there is a need to as to improve it as well.</p>
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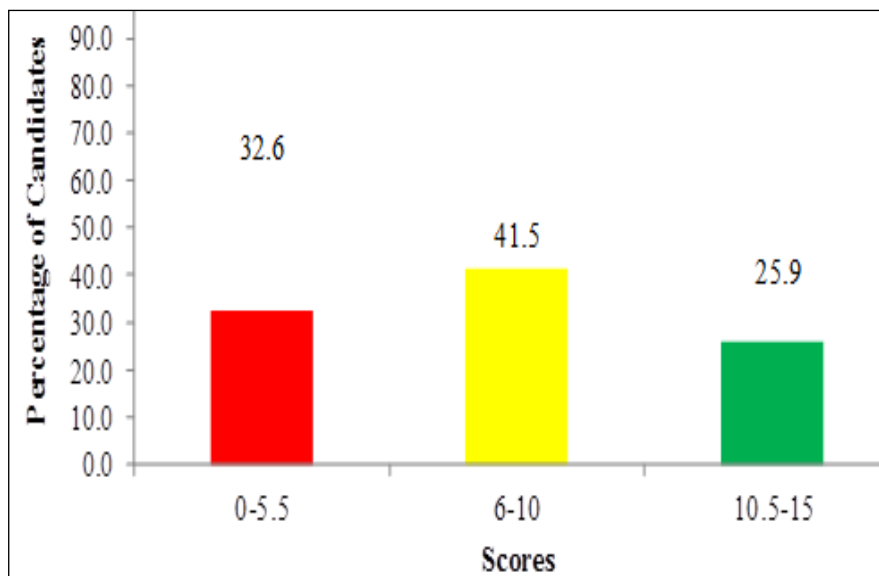
Extract 11.2: Candidates incorrect response in question 11.

In extract 11.2, the candidate stated the places where multimedia can be used. He/she described places such as the bank, business project, education sector, police stations and at hospitals. This indicates that the candidate lacked knowledge on the importance of multimedia in the teaching and learning process.

## 2.12 Question 12: Generic Application Software

In this question the candidates were asked to elaborate five uses of spreadsheet application in the society.

A total of 518 (18.8 %) candidates attempted this question, out of which 169 (32.6%) scored from 0 to 5.5 marks, 215 (41.5%) scored from 6 to 10.0 marks and 134 (25.9%) scored from 10.5 to 15.0 marks out of 15 allocated marks. The data shows that the candidates' performance in this question was good, because 67.4 percent of the candidates scored above 5.5 marks. Figure 12 shows the summary of candidates' performance in this question.



**Figure 12:** *The candidates' performance in question 12.*

The analysis also shows that the candidates who scored high marks (10.5 to 15) were able to elaborate five uses of spreadsheet application in the society. Some of them managed to write clear introduction, description with clear examples and conclusion. Extract 12.1 shows a sample of a correct response from one of the candidate in this category.

12.	<p>Spreadsheet: This is the programs which can be installed in the computer and provide the worksheet for representation and manipulations of data.</p> <p>The following are the applications of Spreadsheet in the society.</p> <p>It can be applied in banking; The spreadsheet provides a working window place where the informations of clients and their amount of money can be written and also all the payroll of the banker workers can be arranged in the spreadsheet and that simplify banking process.</p>	
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It can be applied in business. business people can apply spreadsheet to their business since it can help them to records all the items of their business and their cost. And also keep any information in the spreadsheet for their future use because spreadsheets provide a chance for editing and recalculation even when one items was entered wrongly.

It can also be used in Scientific data analysis. Scientist can use spreadsheets to write all their experiments data they get and later on can command it to perform some calculation according to their needs. Since spreadsheets contains some mathematics calculation such as finding total, average and others.

Therefore, spreadsheet application in different sector should be applied especially in our Secondary Schools and primary now is not the time of using pencil and paper to calculate the grades, total, average and position of students. Teachers should use electronic spreadsheets.

Extract 12.1: One of the candidate's correct responses in question 12.

Extract 12.1 shows that, the candidate managed to elaborate correctly the uses of spreadsheet application in the society. The candidate mentioned the uses of spreadsheet such as banking, business, statistics, science and census. In addition, most of the candidates who scored average marks (6 to 10) were able to mention five points but could not manage to elaborate them all.

On the other hand, majority of the candidates who scored low marks (0 to 5.5) mixed up the uses of word processor and spreadsheet while others wrote the application of computer in general. For example, one candidate wrote that, the spreadsheet enables the user to print the text. Extract 12.2 shows a sample of an incorrect response from one of the candidates who attempted this question under this category.

12. Spread sheet application, is the kind of software program that analyze, manipulate, interpret and present information by slide show. In other way spreadsheet is presentation or power point program in the computer system. The following are uses of spread sheet application in the society.

- It is used to share information due to the application of spread sheet used to share different information from different source of information. Example internet and e-mails.
- It is used to create motivation among the user, through using of slide show. Used to create motivations among the users in application system of spread sheet in the society.



It's used to save time and effort. For example during meeting, many display spreadsheet application that difficult every one to see ~~the~~ what was presented and helps to save time and effort in making explanation of word by word in the society activities or programs.

Therefore, spreadsheet has many importance in both societies and learning and teaching process such as simplicity, teaching and learning process, and communication. It helps in sharing source of informations, helps in creating motivations, helps in saving time and effort and as well as helps in solving language barriers.

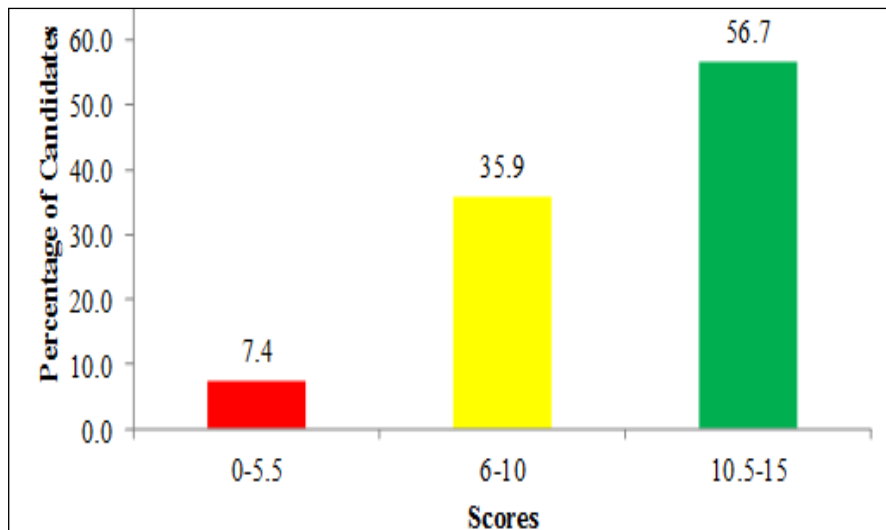
Extract 12.2: An incorrect response in question 12.

Extract 12.2 shows that, the candidate was unable to elaborate the uses of spreadsheet application in the society. The candidate described the uses of Microsoft PowerPoint instead of Spreadsheet. This indicates that the candidate had limited knowledge on the differences between the two application software.

## 2.13 Question 13: Socio-economic and Cultural Aspects of ICT

The question required the candidates to justify the statement that “The introduction of social networks has brought some drawbacks to the society”. They were required to use five points. This question required the candidates to justify drawbacks which have been brought into the society as a result of the introduction of social networks.

A total of 2,312 (84.0%) candidates attempted this question, out of which 172 (7.4%) scored from 0 to 5.5 marks, 829 (35.9%) scored from 6 to 10.0 marks and 1,311 (56.7%) scored from 10.5 to 15.0 marks out of 15 allocated marks. The general candidates' performance in this question was good, because 92.6 percent of the candidates managed to score above 5.5 marks. Figure 13 shows the summary of candidates' performance in this question.



**Figure 13:** *The candidates' performance in question 13.*

The candidates' response shows that some candidates who scored high marks (10.0 to 15) managed to explain five drawbacks of social network to the society. However, some of the candidates in this category failed to score full marks due to various reasons such as inappropriate explanation for some of the drawbacks as well as grammatical errors. Extract 13.1 shows a sample of a correct response from one of the candidates in this category.

13.	<p>Social networks these are networks interconnected linked together and shared by large group of people in the community. For example metropolitan area network shared by people in a city.</p> <p>The following are drawbacks to the society due to introduction of social networks.</p> <p>Time consuming; due to social network people are much addicted with networks whereby spends much time chatting, and fail to do other development activities which may lead to poverty in the society and an individual. For example people spend much time chatting in whatsapp and facebook.</p> <p>It has led to moral erosion; whereby large number of people using social network use it illegally especially youth use social networks on watching pornography which leads to poor and bad behaviour and change their behaviours.</p> <p>Money consuming; also this is also a drawback of the use of social network since people use lot of money buying bundles for making service in the internet. Instead of using money for development they spend and misuse money on social network to get update in day to day.</p> <p>It has led to increase in crimes; for example theft through social network has increased at high rate. Whereby there</p>
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13.	are some people creating various account	
	through social networks with main aim of	
	theft.	
	It has led to culture destruction;	
	whereby through using social needs people	
	have been changed the cultural value accordi	
	ng to the society. Whereby culture has	
	destroyed in term of <del>des</del> dressing style,	
	shaving style where people adapt from	
	watching picture in networks.	
	Generally the government	
	should provide education about positive use	
	social <del>excess</del> networks and establish strictly	
	laws for criminals and who go against.	

Extract 13.1: Candidates' correct response in question 13.

Extract 13.1 shows that, the candidate managed to explain clearly the drawbacks of introduction of social network to the society. Further analysis of data shows that most of the candidates who scored average marks (6 to 10) explained three to four points while others were repeating some drawbacks. For example, one candidate wrote "social network influence moral decay in our society." and another candidate wrote "social network it's a source of evils". This signifies that the candidates had knowledge on drawbacks of social network.

On the other hand, the candidates who scored low marks (0 to 5.5) did not meet the question demands. Some of them were able to write the introduction alone while others wrote poor answers. For example, one candidate explained the advantages of introduction of social network instead of the disadvantages of introduction of social network to the society. Extract 13.2 shows a sample of incorrect response from one of the candidates.

13.	Social networks-Refer to the process of using network system in a social contextual. Social network is being used in different area such as in health centers and in education sectors, where by the social network is participate to some extent to bring development to the society.	
	The following are the drawback of social network to the society.	

Helped to develop skills of the people; through social network people have been acquired skills that are being used with them to solve various social problems that seems to rise in the society but they acquired on how they can develop in social activities through applying the skills they adopted.

To improve social services; The introduction of social networks led to the improving social services like in education, health services and in electricity and water supply to the people of a given society as helped people to live any without any problems.

Improved living standard of the people; Due to the availability of social network in a given society people has been developed to the system of living. Life of the people as they are able to access all social needs that are crucial to human life like health care.

Promotes employment opportunities; The social network introduced to the society have been provide employment to the people due to the improvement of services like doctors and nurses in health service and teachers in education service through building more schools.

13	so that they could promote development to the society -
	and to reduce the number of dependence in the society.
	Therefore, the social networks does not only brought
	development in social activities, but also it has contributed
	much to the development of economic activities such as
	agriculture activities due to the increase of production
	and also the increase of payment of tax to the -
	people led to the increase of government revenue.

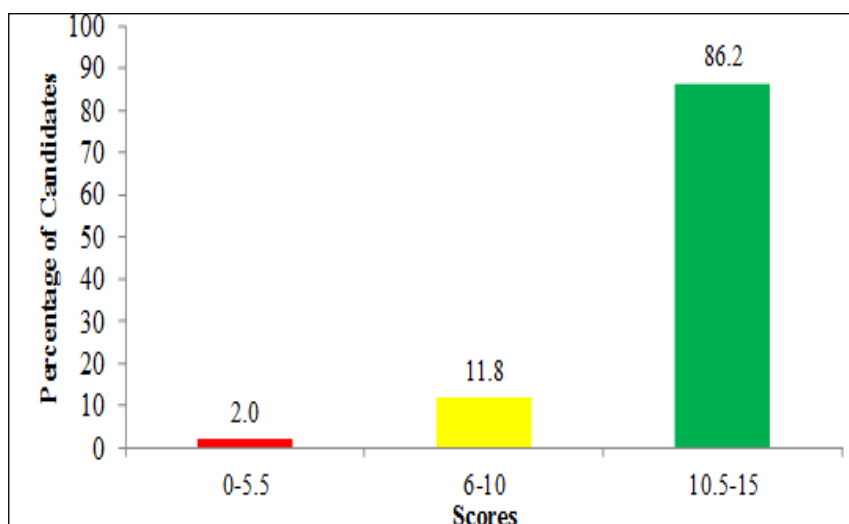
Extract 13.2: One of candidates' incorrect response in question 13.

In Extract 13.2 the candidate described the advantages instead of the drawbacks of social networks.

## 2.14 **Question 14: Assessment Procedures for Information and Computer Studies**

In this question, candidates were required to elaborate five assessment tools that can be used in assessing Information and Computer Studies in secondary schools.

A total of 2,370 (86.1 %) candidates attempted this question, out of which 47 (2.0%) scored from 0 to 5.5 marks, 279 (11.8%) scored from 6 to 10.0 marks and 2,044 (86.2%) scored from 10.5 to 15.0 marks out of 15 allocated marks. The data shows that the candidates' performance in this question was good, because 98 percent of the candidates were able to score above 5.5 marks. Figure 14 shows the summary of performance in this question.



**Figure 14:** The candidates' performance in question 14.

The statistics show that majority of the candidates who scored high marks (10.0 to 15) managed to elaborate five assessment tools that can be used in assessing Information and Computer Studies in secondary schools by giving relevant examples. However, 85.8 percent of the candidates in this category could not score full marks due to various reasons such as inappropriate introduction, conclusion, lack of relevant examples and improper organization of their ideas. Extract 14.1 shows a sample of correct response from one of the candidates.

14.	Assessment are all activities designed to	
	measure achievement of learner. In learning process	
	learner must be assessed to know his/her achievement.	
	There are different tools that can be used to assess	
	Information and computer studies in secondary	
	schools. The following are the tools for assessing ICT	
	subject studies in secondary schools:-	
	Test and examination, there are series of	
	questions designed to measure knowledge and skills	
	of the learner. Information and communication	

Technology computer studies teacher can plan the question and design it so as to know if the learner know / have understood all the lesson when he/she is teaching in the class.	
Portfolio; is the series of all activities and related materials of Information and computer studies. Teacher can collect the portfolios of all learner so as to see their progress and how they do when they are individual. In portfolio there must be question paper and other all summary of Information computer studies.	
Interview; the interview can be done through a closed and open question so as to check whether the student have any idea on that subject. Teacher can ask student different question that are challenging are interesting. The conducive environment will make learner to be free to express what he/she know about what teacher ask him/her.	
Questionnaire; teacher can prepare question that learner can respond on writing their answer. The question can be based on Information computer studies. Each student can respond on what he/she know then teacher get a task to review on each and every thing that students respond.	
Observation; teacher prepare the guided question that will guide him/her in observing the kind of behaviour or performance that he/she want to his/her student to respond. This tool need more time for practicing the method so as to get clear answer from the phenomena.	
Therefore assessment tools help teacher to diagnose the difficulties that face learner in the process of learning, to select learner for further studies and to motivate learner in any means where it is needed.	

Extract 14.1: Candidates correct response in question 13.



Extract 14.1 shows that, the candidate managed to elaborate correctly five assessment tools that can be used in assessing Information and Computer Studies in secondary schools.

Further analysis of data indicates that some of the candidates who scored average marks (6 to 10) could not manage to elaborate all tools according to the demand of the question. For example, one of candidates wrote, “Questionnaire: A teacher should use question and answer in order to do assessment to his students due to the subject”.

On the other hand, few candidates scored low marks (0 to 5.5). Some candidates in this category elaborated the methods of assessment instead of assessment tools while others explained the advantages of assessment instead of elaborating the tools. Another candidate wrote, “Teacher, students and summary of a lesson notes as assessment tools”. Others described computer laboratory tools which are all incorrect answers. Extract 14.2 shows a sample of an incorrect response from one of the candidates.

14.	<p>Assessment is the systematic procedure of evaluate and judgement something or the way of analyzing collecting and interpret information and evaluate the of the given problems, Assessment tools are tools or device used to assess the information and computer program. the following are the tools used.</p> <p>Syllabus: In assessing information and computer studies in secondary schools, syllabus are very important in information and computer studies subject it can assess if the syllabus are related to the subject content.</p> <p>Scheme of work: In assessing information and computer studies in the secondary schools scheme of work are very close to make of to teach systematic.</p> <p>Lesson plan: In secondary schools lesson plan are very important to make sure that the teacher's are prepared well a lesson and follow all procedure of teaching and learning process.</p> <p>Subject logbook: These are tools are used to record all activities done by subject teacher and head of department sign and head of school signature, in secondary school subject logbook are very important in information and computer studies.</p> <p>Lesson notes: In secondary schools lesson notes are very important to make sure that students are provided notes for reference to review.</p> <p>Therefore information and computer studies in secondary schools are very important tools to assess the teacher to make sure they teach effectively and according to their syllabus subject.</p>
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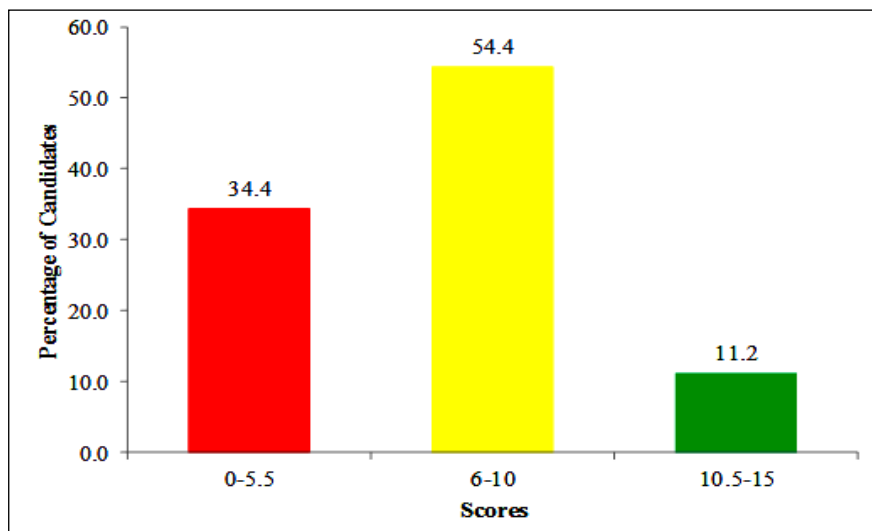
Extract 14.2: Candidates' incorrect response in question 14.

In Extract 14.2 the candidate explained the teaching and learning materials instead of assessment tools. This implies that the candidate did not understand the requirement of the question since the question demands were not met.

## 2.15 Question 15: Socio-Economic and Cultural Aspects of ICT

The question asked as follows: *The introduction of information and communication Technology has improved services in various areas in the society. Using five points, explain how banking services have been improved?* The candidates were required to explain how banking services have been improved due to introduction of Information and Communication Technology by using five points.

A total of 553 (20.1%) candidates attempted this question, out of which 190 (34.4%) scored from 0 to 5.5 marks, 301 (54.4%) scored from 6.0 to 10.0 marks and 62 (11.2%) scored from 10.5 to 15.0 marks out of 15 allocated marks. The data shows that the general candidates' performance in this question was average, because 65.5 percent of the candidates scored above 5.5 marks. Figure 15 shows the summary of candidates' performance in this question.



**Figure 15:** *The candidates' performance in question 15.*

The candidates' responses show that the candidates who scored high marks (10.5 to 14.5) managed to explain and provide appropriate examples on how banking services have been improved as a result of the introduction of ICT. In this question no candidate scored full marks because some explanations lacked examples. Extract 15.1 shows a sample of a correct response from one of the candidates in this category.

15.	Information and communication - technology have improved services in various area in the society through easily transfer of information from one area to another, industry activity and hospital has improved through the using of information and communication technology. The follows is how banking services have been improved :-
	Availability of automatic teller machine (ATM) : due to the presence of information and communication technology help for large amount of the availability of automatic teller machine in different place which help to get the banking service in a simple way.
	Availability of mobile service; due to the availability of banking services also help for large amount on the availability of mobile service which will help the banking service to be available also through phone which simplify the banking service for large amount.
	Accuracy; due to the introduction of information and communication technology help for large amount on all banking services to be accuracy to performe their activity and provide their service.

Extract 15.1: One of candidates' correct responses in question 15.

In Extract 15.1, the candidate managed to explain how banking services have been improved due to introduction of ICT by giving five points as well as examples.

Further analysis of data indicates that some of the candidates who scored average marks (6.0 to 10.0) managed to explain correctly two to three points out of 5 allotted to the question. For examples, one candidate wrote, “through provision of loans and grants to the people, this is another service which improved in banking services because it helps to provide loans to the people in the societies”. Others mentioned all points but they lacked description or examples.

On the other hand, the candidates who scored low marks (0 to 5.5) just managed to write an introduction but explained in general how services have been improved in the society due to introduction of ICT instead of banking services as they were asked to do. For example, one candidate wrote, “ICT have improved entertainment”. Extract 15.2 shows a sample of incorrect response from one of the candidates.

15	Information and communication technology - This refers to the hardware equipment and software equipment in which information can be manipulated stored in a computer. The following are the areas which have been improved in during introduction of information and communication technology.
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15	<p>Improvement of agricultural activities or Sector: The introduction of information and communication technology help in improvement of agricultural sector due to uses of machine in agriculture also production of herbicide which is in killing pest in the crops. This is one of the way where information and communication technology improve</p> <p>Improvement of industrial sector: The introduction of information and communication technology lead in development of industrial sector to produce good material which are needed in the society. for example production of food, and production of material like machine which is used in different activities.</p> <p>Improvement of security: The introduction of information and communication technology lead in promote the security in different area through online. This is simple and easy to make good security by using different camera like security camera.</p> <p>Improvement of health services and infrastructure: The introduction of information and communication technology also lead to improve the health</p>
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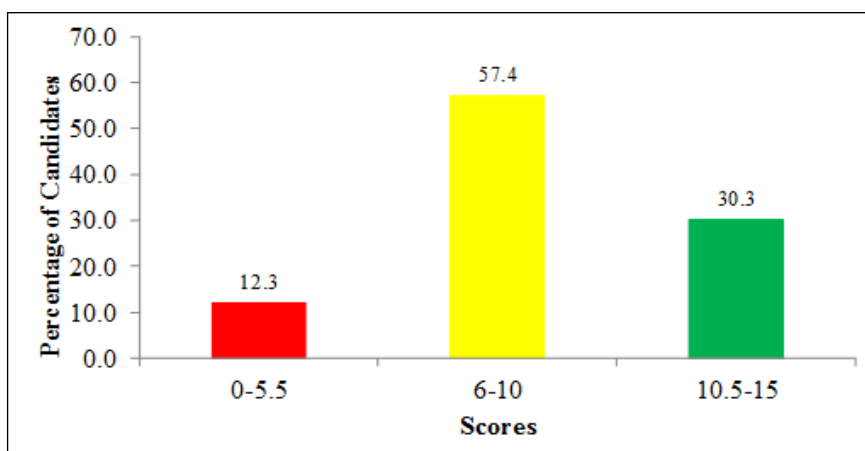
Extract 15.2: Candidates' incorrect response in question 15.

Extract 15.2 shows that, the candidate described the advantages of ICT in general rather than giving the reasons to elaborate how banking services have been improved due to the introduction of ICT.

## 2.16 Question 16: Planning and Preparation for Teaching Information and Computer Studies

In this question the candidates were required to describe the criteria used in selecting a teaching method.

A total of 2,577 (93.6%) candidates attempted this question, out of which 316 (12.3%) scored from 0 to 5.5 marks, 1,481 (57.4 %) scored from 6.0 to 10.0 marks and 780 (30.3 %) scored from 10.5 to 15.0 marks out of 15 allocated marks. The general candidates' performance in this question was good, because 87.7 percent of the candidates scored above 5.5 marks. Figure 16 shows the summary of candidates' performance in this question.



**Figure 16:** *The candidates' performance in question 16.*

The analysis shows that the candidates with high marks (10.5 to 15.0) managed to describe well the five criteria used in selecting a teaching method. In this question only 5 (0.2%) candidates were able to score full marks. In addition, some candidates in this category could not score full marks because they lacked appropriate examples to support their arguments. Others lacked English proficiency writing skills. For example, one candidate wrote, “the nature of the learner that going to teach, the age of learners determines the level of understanding therefore the method to be

selected should consider their level of understanding". Extract 16.1 shows a sample of a correct response from one of the candidates.

16	Teaching methods refers to the techniques which are applied by the teacher to facilitate the learning. Those techniques are group discussion, gallery walk, brainstorming, Role play, experimentation, demonstration, think-pair and share, Tour study, case study, buzz group discussion, dramatization, lecture, guest speaker, Jigsaw method, Inner and outer circle, stimulation and Role play. Thus - the following are criteria used in selecting a - teaching method:
16	Age and ability of the learners; The teacher should consider the age, level and their cognitive level of the learners. Example, the teacher may select the role play technique for the form three students to facilitate his/her learning, while the students of standard one, he/she may use the methods related to singing example dramatization. Nature of the content (subject matter); The nature of the content area determines what the methods should be used. Example. The content related to prove the science concept (determination of the acceleration due to gravity), teacher should use experimentation method. Similarly when the teacher is teaching about historical sites, he/she should apply study tour method. Class/group size; The teacher should consider the number of the student in the classroom. Example, If the number of the student is very large (overcrowded) He/she is highly advised to used - demonstration method, On the other hand, if the -



their number is low, He/she can use gallery walk-
and Jig-saw to facilitate his/her teaching and learning
Availability of materials (resources); In selecting
the teaching method, the teacher should consider
availability of the materials in the school/setting -
example, If materials are highly available, the -
teacher may use experimentation method, gallery-
walk and group discussion, and if they are -
not rarely available, he/she can use demons-
tration methods.

Extract 16.1: Candidate's correct response in question 16.

In Extract 16.1 the candidate managed to describe clearly the criteria used in selecting a teaching method by providing five points.

Furthermore, the analysis show that the candidates who scored average marks (6 to 10) managed to explain correctly two to three criteria while others provided incorrect introduction. For example, one candidate wrote, "teaching method; means the method in which teacher are use in order to facilitate teaching and learning process". Another one wrote, "Example, the use of aids, the use of real environment, participatory method, lecture method, question and answer method". These responses imply that candidates lacked knowledge about teaching and methods and also they lacked English language proficiency.

On the other hand, the candidates who scored low marks, (0 to 5.5), just managed to outline the criteria to be used, but they could not explain them. Other candidates in this category misunderstood the requirement of the question. For example, one candidate listed the following as criteria for selecting teaching method: authorship, contents, organization language, graphs and charts. Extract 16.2 shows a sample of a response from a candidate who could not manage to describe the criteria for selecting a teaching method.

16	Teaching method, is the way which used by the teacher in teaching and learning process. It can be participatory and non participatory method. Example of participatory method are group discussion, group work, role play and others. Example of non-participatory method is lecture, play, song and others. So the following are the criteria used in
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selecting method as follows.
Attention of the student, the first thing to consider is to see that a method you choose it hold the attention of the learner, if yes it is important to select this method like participatory method.

	Motivation, if the teacher need to select a teaching method should take a time to see that, that way or method can motivate students during the teaching and learning process if it motivate a learner should select that method example a roleplay, song, case study, field trip.	
	can hold and lead memory improvement, when the teacher select a teaching method if it enhance memory or mental developed especially in thinking, remembering, recalling, storing information should select it and using in the process of teaching and learning.	
	lead active participation of the learner during the teaching and learning process, if yes the method will be selecting because it influence a students to ask question, to speaking, two write if the teacher or member of the student write and lead to express their ideas example by using discussion method, question and answer method.	
	Therefore if a teachers fail to choose a good method of teaching, method it could hold attention of the student during the teaching and learning process, and difficult the student to be active participation on the classroom.	

Extract 16.2: One of the candidate's incorrect response in question 16.

In Extract 16.2 the candidate failed to describe the criteria used in selecting teaching method. The candidate described some characteristics of good teaching method instead of things to consider in selecting a teaching and learning method.

### 3.0 CANDIDATES' PERFORMANCE IN EACH TOPIC

In this examination, the questions were set from 8 topics. The analysis of the candidates' responses shows that the performance was good in the topics of *Assessment Procedures for Information and Computer Studies* (98.0%), *Multimedia* (97.5%), *Planning and Preparation for teaching Information and Computer Studies* (87.7%) as well as *Socio-Economic and Cultural Aspects of ICT* (76.3%). The good performance was a result of correct interpretation of the questions and candidates' good practical skills.

Moreover, the candidates had average performance in the topics of *Generic Application Software* (55.5%), *Computer Basics and Networks* (49.0%) and *Computer Laboratory Management Skills* (47.5%). This performance was an outcome of insufficient understanding on basic computer-related concepts.

However, the candidates performed poorly in the topics of *Website Design and Development* (2.2%). This is because the candidates lacked practical skills in the programming. The performance of the candidates in each topic is shown in the Appendix.

### 4.0 CONCLUSION

In this examination the majority of the candidates responded to most of the questions correctly. The analysis on each question shows that the candidates' performance was good in questions 3, 4, 5, 7, 11, 13, 14 and 16 while it was average in questions 6, 12 and 15. On the other hand, it was poor in question 1, 2, 8, 9 and 10.

The analysis on the 8 topics which were examined shows that 4 topics had good performance, 3 topics had average, and the remaining 1 topic had poor performance. Therefore, the overall performance in Information and Communication Technology in 2020 was good. The reasons for the good performance include sufficient knowledge of and skills in most of the examined areas. Moreover, it was due to the candidates' ability to recall, explain, and make analysis in answering the questions.

The analysis of the candidates' performance in each topic indicates that the candidates had difficulties in answering questions from the topics of *Website Design and Development*, *Computer basics and Networks* and *Generic Application Software*. The poor performance in the questions is attributed to the candidates' insufficient knowledge and skills on the topics. They lacked knowledge on the given concepts, and some of them interpreted wrongly the asked concepts.

## **5.0 RECOMMENDATIONS**

In order to improve the candidates' performance in future Information and Communication Technology examinations, the following should be done:

- (a) It is necessary that, teachers provide more exercises, tests, and examinations to enhance students' mastery of theoretical concepts, and improve their practical skills.
- (b) Education stakeholders, such as the government, parents and school managers are advised to ensure that schools have well and equipped ICT laboratories. Such laboratories will facilitate improvement in teaching and learning especially practical activities.
- (c) Students should be encouraged to learn English Language effectively in order to be competent in answering questions particularly those questions which are extended in description.

**SUMMARY OF THE CANDIDATES' PERFORMANCE IN  
INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)  
SUBJECT**

S/N.	Topic	Question Number	Performance in Each Question (%)	Average Performance Per Topic (%)	Remarks
1.	Assessment Procedures for Information and Computer Studies	14	98.0	98.0	Good
2.	Multimedia	11	97.5	97.5	Good
3.	Planning and Preparation for teaching Information and Computer Studies	16	87.7	87.7	Good
4.	Socio-economic and Cultural Aspects of ICT	3	70.7	76.3	Good
		13	92.6		
		15	65.6		
5.	Generic Application software	1	37.4	55.5	Average
		5	85.7		
		10	31.3		
		12	67.4		
6.	Computer Basics and Networks	2	21.9	49.0	Average
		4	92.4		
		7	75.1		
		8	6.7		
7.	Computer Laboratory Management Skills	6	47.5	47.5	Average
8.	Website Design and Development	9	2.2	2.2	Poor

