

# A ATVE

MARCH 2022

<b>The Teachers' Resource Unit and the Regional Inspectorate of Pedagogy, in collaboration with COSTA</b>	<b>SUBJECT CODE NUMBER</b> 0796	<b>PAPER NUMBER</b> 2
<b>GENERAL CERTIFICATE OF EDUCATION AND INTERMEDIATE TECHNICAL AND VOCATIONAL EDUCATION REGIONAL MOCK EXAMINATION</b>	<b>SUBJECT TITLE</b> <b>INFORMATION AND COMMUNICATION TECHNOLOGY</b>	
<b>ADVANCED LEVEL</b>		

Time Allowed: **TWO and a half hours**  
**INSTRUCTIONS TO CANDIDATES**

Mobile phones are **NOT ALLOWED** in the examination room.

## INSTRUCTIONS TO CANDIDATES

*Answer any SIX questions.*

*All questions carry 17 marks each. For your guidance, the approximate mark for each part of a question is indicated in brackets*

*You will be marked on your ability to use good English, to organize information clearly and to use specialist vocabulary where appropriate*

*In calculations, you are advised to show all the steps in your working, giving your answer at each stage.*

*Calculators are allowed.*

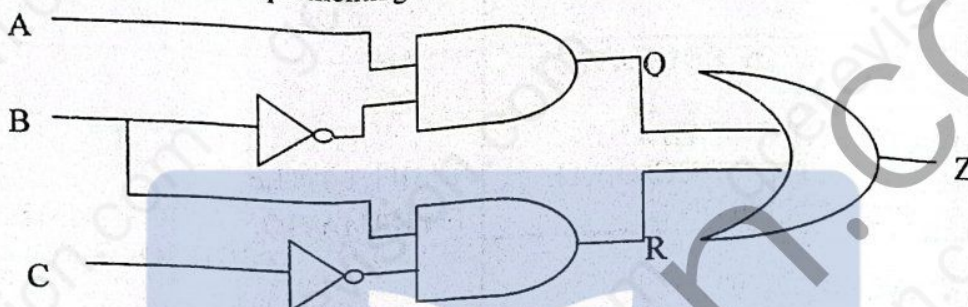
*You are reminded of the necessity for good English and orderly presentation in your answers.*

*You are advised to read carefully through the question paper, before you begin your answers.*



1. i) a) State three components of data communication systems. (3marks)  
 b) Differentiate between Synchronous and Asynchronous transmission. (2marks)  
 c) Describe two applications of the following modes of data communication: Simplex and Full duplex. (2marks)
- ii) Define the following as used in DBMS  
 a) Primary key  
 b) Attribute  
 c) Relationships. (3marks)
- iii) With the aid of a diagram, describe a star topology and state its major limitation. (4marks)
- iv) State the function of the following networking devices  
 a) Firewall  
 b) Gateway  
 c) Modem. (3marks)

2. i) a) List in order the first 4 layers of the OSI model. (2marks)  
 b) What is the importance of implementing a fault tolerant network system? (1mark)
- ii)



- a) Establish the Boolean expression for the logic circuit above? (3marks)  
 b) With respect to the above logic circuit, draw the truth table. (4marks)  
 iii) a) What is GIS? (1mark)  
 b) State three applications of GIS in your community (3marks)  
 c) What is the importance of using the SDLC. (1mark)  
 d) State four models used in SDLC. (2marks)

3. i) Define the following terms giving suitable examples in each case  
 a) Input device  
 b) Antivirus  
 c) Operating System. (6marks)
- ii) Cyberspace has become the most use space with ICT tools; as such the society is experiencing crimes related to cyberspace. Describe the following cybercrimes  
 a) DoS  
 b) Cyber Terrorism  
 c) Phishing. (3marks)
- iii) State two measures each that can be used to combat the crimes in (ii) above. (6marks)
- iv) Carryout the following binary computation  
 a)  $1011 \times 1101$   
 b)  $101010 / 110$ . (2marks)

4. i) Briefly explain what is meant by the following, giving an example for each  
 a) Batch processing (3marks)  
 b) Online processing (3marks)  
 ii) a) What is Digital Divide? (2marks)  
 b) Describe three causes of digital Divide with respect to Communication (3 marks)  
 iii) a) Application programs are used to carry out our day- to -day task. Explain two tasks carried out by spreadsheet and database management system (DBMS). (4marks)  
 iii) What is a Browser? Give two examples (2marks)
5. i) a) Explain two differences in the functioning of impact printer and a non-impact printer (2marks)  
 b) Give two advantages of CRT over LCD (2marks)  
 c) Explain the term "Backup" and list 2 medium used for backing up files. (2 marks)  
 ii) Differentiate the following



- a) Internet and Intranet (2marks)  
 b) HTTP and HTML (2marks)  
 iii) a) State the main difference between Peer-to-Peer network and client-server network. (2 marks)  
 b) What is the difference between LAN and MAN.? Give examples (3marks)  
 iv) Convert  $1110101_2$  to-base 8 (2 marks)

6. i) a) Using a structured design methodology show the step-by-step process of developing a system with aid of a waterfall diagram. (4marks)  
 b) With respect to architecture, Local Area Networks are divided into two categories. With the aid of a diagram, explain these categories. (4marks)  
 ii) When a new ICT system has been tested thoroughly by the programmer then it is ready to be implemented into a working environment replacing the original system.  
 a.State and explain two methods of this implementation. (4 marks)  
 b.Give 2 advantages and 2 disadvantages of each of the strategies given above (4 marks)  
 c.Name two structural based classification of database (1mark)

7. i) Differentiate with examples in each case verification and validation (3marks)  
 ii) Briefly explain the following properties that make computers so useful. (10 marks)

- a) Speed  
 b) Accuracy  
 c) Storage  
 d) Versatility  
 e) Resilience

iii) what are the major differences between the following:

- a) PHP and SQL?  
 b) HTML and CSS

(4 marks)

8. i) Briefly explain the meaning of the following terms:

- a. SQL Join  
 b. E-commerce

(2marks)

ii) Describe how the following activities are accomplished in e-commerce.

- a) Purchasing  
 b) Selling  
 c) Transfer of funds

(2 marks)

(4 marks)

iii) ICT has had a huge impact on individuals and society. One significant impact is on people's working lives. Describe the impact of ICT on people working in manufacturing.

(2 marks)

iv) Give the function of the following components of the microprocessor.

- a. Register  
 b. Bus

(2mks)

v) Below is a piece of code.

```
<?php
$colors = array("blue", "white", "black");
foreach ($colors as $value) {
echo "$value
";
}
?>
```

- a) State the programming language used.  
 b) Give the output when this code is executed.  
 vi) Describe one way which can be used to prevent:  
 a) Repetitive Strain Injury (RSI)  
 b) Eye strain

(1 mark)

(2 marks)

(2 marks)

END