

S6232&1 WASSCE

May/June 2014

INFORMATION

AND COMMUNICATION

TECHNOLOGY (ELECTIVE) 2&1

Objective & Essay

2 hours

2&1

Name.....

Index Number.....

THE WEST AFRICAN EXAMINATIONS COUNCIL

West African Senior School Certificate Examination

May/June 2014

**INFORMATION AND COMMUNICATION
TECHNOLOGY (ELECTIVE) 2&1**

2 hours

Do not open this booklet until you are told to do so. While you are waiting, read and observe the following instructions carefully. Write your name and index number in ink in the spaces provided above.

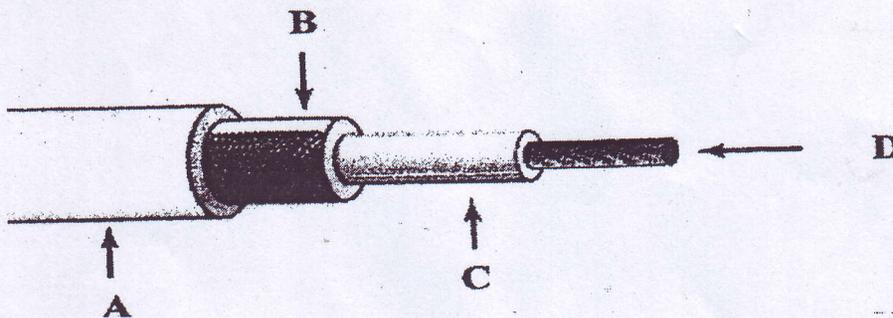
This paper consists of two papers. Answer Paper 2 which comes first in your answer booklet and Paper 1 on your Objective Test answer sheet. Paper 2 will last 1 hour after which the answer booklet will be collected. Do not start Paper 1 until you are told to do so. Paper 1 will last 1 hour.

3018390
11547373
Ameyan Branya
26159
PAPER 2
ESSAY
[30 marks]

1 hour

Answer **three questions only**. All questions carry equal marks.

1. (a) (i) List the **basic** components of a *decision support system*. [4 marks]
(ii) Draw a diagram showing how the basic components listed in (i) above interact among themselves. [4 marks]
- (b) In the context of decision support systems, state the difference between a *special-purpose* and *general purpose* planning language. [2 marks]
2. (a) What is *Desktop Publishing*? [3 marks]
- (b) In the context of desktop publishing, list **four**:
(i) elements of design; *lines, shapes,* [4 marks]
(ii) principles of design. [4 marks]
- (c) Explain the term *imposition* in desktop publishing. [3 marks]
3. (a) Explain *low level language*. [2 marks]
- (b) Describe
(i) machine language; [4 marks]
(ii) assembly language. [4 marks]
4. (a) Label the coaxial cable below.



[4 marks]

- (b) State **two** disadvantages of **each** of the following network media:
(i) twisted pair;
(ii) fibre-optic;
(iii) wireless (Unguided media).

[6 marks]

5. (a) Write the BASIC expression for the following mathematical notation:

$$\frac{\pm b \sqrt{b^2 - 4ac}}{2a}$$

[6 marks]

- (b) Write the BASIC expression for the product of the two matrices A and B.

$$A = \begin{pmatrix} a & b \\ c & d \end{pmatrix}, \quad B = \begin{pmatrix} e & f \\ g & h \end{pmatrix}$$

[4 marks]

END OF ESSAY PAPER

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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.**

PAPER 1
OBJECTIVE TEST
[50 marks]

1 hour

1. Use 2B pencil throughout.
2. On the pre-printed answer sheet, check that the following details are correctly printed:
 - (a) In the space marked *Name*, check your **surname** followed by your **other names**.
 - (b) In the spaces marked *Examination*, *Year*, *Subject* and *Paper*, check 'WASSCE May/June', '2014', 'INFORMATION AND COMMUNICATION TECHNOLOGY (ELECTIVE)', and '1' in that order.
 - (c) In the box marked *Index Number*, your **index number** has been printed vertically in the spaces on the left-hand side, and each numbered space has been shaded in line with each digit. **Reshade** each of the shaded spaces.
 - (d) In the box marked *Subject Code*, the digits 623113 are printed vertically in the spaces on the left-hand side. **Reshade** the corresponding numbered spaces as you did for your index number.
3. An example is given below. This is for a female candidate whose *name* is Kafui Mumuni ASARE. Her *index number* is 7102143958 and she is offering *Information and Communication Technology (Elective)*1.

THE WEST AFRICAN EXAMINATIONS COUNCIL ANSWER SHEET

PRINTED IN BLOCK LETTERS		GHA
Name: ASARE KAFUI MUMUNI		
Examination: WASSCE May/June	Year: 2014	
Subject: INFOR. AND COMM. TECH. (ELECT.)	Paper: 1	

INSTRUCTIONS TO CANDIDATES

1. Use grade 8B pencil throughout.
2. Answer each question by choosing one letter and shading it like this: =A= =B= =C= =D= =E=
3. Erase completely any answer you wish to change.
4. Leave extra spaces blank if the answer spaces provided are more than you need.
5. Do not make any markings across the heavy black marks at the right hand edge of your answer sheet.

INDEX NUMBER										
	0	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	6	7	8	9
2	0	1	2	3	4	5	6	7	8	9
4	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4	5	6	7	8	9
8	0	1	2	3	4	5	6	7	8	9

SUBJECT CODE										
	0	1	2	3	4	5	6	7	8	9
2	0	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	6	7	8	9
3	0	1	2	3	4	5	6	7	8	9

For Supervisors only
If candidate is absent
shade this space.



Answer all the questions.

Each question is followed by four options lettered A to D. Find the correct option for each question and shade in pencil on your answer sheet, the answer space which bears the same letter as the option you have chosen.

Give only one answer to each question. An example is given below.

Which of the following is used to speed up data retrieval in database?

- A. Data file
- B. Key field
- C. Offline storage
- D. Program file

The correct answer is Key field, which is lettered B, and therefore answer space B would be shaded.

A

B

C

D

E

Think carefully before you shade the answer spaces; erase completely any answers you wish to change.

Do all rough work on this question paper.

Now answer the following questions.

1. The sum of the octal numbers 654_8 and 176_8 in octal is
 - A. 1508_8 .
 - B. 1062_8 .
 - C. 830_8 .
 - D. 1052_8 . ✓
2. The decimal number 272 converts to the binary number as
 - A. 100001000_2 .
 - B. 000100001_2 .
 - C. 100010000_2 . ✓
 - D. 101000100_2 .
3. The number of bits that represent a hexadecimal number is
 - A. 4. ✓
 - B. 8.
 - C. 16.
 - D. 32.
4. The decimal number 0.3125 converts to binary as
 - A. 0101_2 . ✓
 - B. 0.0101_2 .
 - C. 0.1101_2 .
 - D. 1001_2 .
5. The time between job submission and the return of results in batch processing is
 - A. elapsed time.
 - B. job around time.
 - C. return around time.
 - D. turn around time.

6. Which of the following is **not** a component of a decision support system?
 - A. Corporate database
 - B. Decision database
 - C. Model database
 - D. Planning language

7. Which of the following files is used to hold all changes to a master data file?
 - A. Batch file
 - B. Dynamic master file
 - C. Program file
 - D. Transaction file

8. A file-management system has the following disadvantages **except**
 - A. data redundancy.
 - B. expensive to develop.
 - C. lack of data integrity.
 - D. lack of program independence.

9. The tool that holds objects such as text, pictures and graphics in desktop publishing is
 - A. frame.
 - B. task pane.
 - C. design checker.
 - D. publication gallery.

10. Which of the following programs is a desktop publishing application program?
 - A. Access
 - B. PageMaker
 - C. Word Perfect
 - D. Writer

11. The task pane that displays all the designs available for publication is
 - A. frame.
 - B. design checker.
 - C. place holder.
 - D. publication gallery.

12. The terminologies in a desktop publishing application include
 - A. active cell.
 - B. design checker.
 - C. formula area.
 - D. name box.

13. To select multiple non-adjacent cells in a worksheet, click on the cells whilst holding the
 - A. ALT Key.
 - B. CTRL Key.
 - C. SHIFT Key.
 - D. CTRL + ALT Key.

14. Which of the following displays the content of an active cell in a worksheet?
 - A. Formula bar
 - B. Menu bar
 - C. Name box
 - D. Status bar

15. A cell formatted to have an accounting style shows negative numbers in
- A. bold.
 - B. brackets.
 - C. *double quotes*.
 - D. parentheses.
16. The process of identifying specific rows and columns so that these rows and columns are always visible on the screen is
- A. fixing.
 - B. freezing.
 - C. locking.
 - D. selecting.
17. The access time on a disc refers to
- A. latency.
 - B. revolution per unit time.
 - C. opening time to access a database.
 - D. difference between the time data is requested and received.
18. The type of cable used by internal SCSI devices is
- A. 21-pin ribbon cable.
 - B. 32-pin ribbon cable.
 - C. 40-pin ribbon cable.
 - D. 50-pin ribbon cable.
19. The bus feature that allows devices to bypass the processor and write their information directly to the main memory is
- A. *DMA*.
 - B. *IRQs*.
 - C. *I/O addresses*.
 - D. Bus mastering.
20. The CD-ROM audio cable connects to the
- A. hard drive.
 - B. power supply.
 - C. speaker.
 - D. sound card.
21. The process of copying a file from a webserve onto a microcomputer is
- A. downloading.
 - B. fragmenting.
 - C. upgrading.
 - D. uploading.
22. Software is said to be *portable* if
- A. it is cheap.
 - B. it can be moved from place to place.
 - C. the media it is stored on can be transported.
 - D. it is ran on different hardware platforms.
23. To facilitate quick data access, the appropriate storage medium to use is
- A. magnetic disk.
 - B. magnetic tape.
 - C. optical disk.
 - D. streaming tape.

24. The application used to view web pages is
- A. Notepad.
 - B. Spreadsheet.
 - C. Web browser.
 - D. Word processor.
25. The acronym BASIC means
- A. Binary Asynchronous System Interchange Connections.
 - B. Bit Assisted Synchronous Interchange Connection.
 - C. Beginners' All-purpose System Instruction Scheme.
 - D. Beginners' All-purpose Symbolic Instruction Code.
26. Which of the following HTML tags creates the smallest headings in a browser?
- A. `<h1>...</h1>`
 - B. `<h2>...</h2>`
 - C. `<h4>...</h4>`
 - D. `<h6>...</h6>`
27. The purpose of language translators is to
- A. convert source program instructions into binary.
 - B. convert object program into source program.
 - C. enable the programmer to write the program instructions in a familiar language.
 - D. translate one language into another.
28. The HTML file used to load the default page from a website is
- A. begin.html.
 - B. first.html.
 - C. head.html.
 - D. index.html.
29. The closing tag for `<p>` is
- A. `<p>`.
 - B. `<p/>`.
 - C. `</p>`.
 - D. `[p]`.
30. The use of the `...` tag in a web page is to make characters
- A. bold.
 - B. blur.
 - C. blink.
 - D. blind.
31. The purpose of computer networking is
- A. sending mails.
 - B. sharing resources.
 - C. printing documents.
 - D. browsing the internet.
32. Copying file onto a removable disk and sending it to another computer with a printer to print is referred to as
- A. disknet.
 - B. peernet.
 - C. sneakernet.
 - D. peer-to-peer.

33. The function of the braided foil shield around twisted wires in shield twisted pair cable is to
- prevent shock.
 - make the cable more robust.
 - decrease electromagnetic interference.
 - prevent short circuiting.
34. For two computers to send and receive data, the network interface card must agree on all the following **except**
- the maximum size of the data frames.
 - the time needed between transmissions.
 - the bus mastering of the cards.
 - the speed at which data must be transmitted.
35. Routers are slower than Gateways because
- Routers are obsolete.
 - Gateways are more intelligent, hence analyse every packet.
 - Routers are more intellegent, hence analyse every packet.
 - Routers are made of semi-conductors.
36. One example of a database program is
- access.
 - excel.
 - power point.
 - word.
37. Code that is stored with a form or report is
- Class module.
 - Form module.
 - General module.
 - Standard module.
38. Query in a database application can be used to do the following **except**
- create tables.
 - delete records.
 - give space.
 - separate values.
39. In an SQL statement, the Ampersand (&) is used to
- combine values.
 - duplicate values.
 - modify records.
 - normalize field names.
40. Which of the following field names is valid?
- first/name
 - first&name
 - firstname%
 - _firstname
41. Which of the following programs copies itself into memory or onto a disk until no more space is left?
- Antiviral agent
 - Trojan
 - Virus
 - Worm

42. The interactive computer program that helps users to solve problems is
- A. Robot.
 - B. Expert system.
 - C. Natural language.
 - D. Perception System.
43. To display information in multimedia form we use
- A. Archie.
 - B. Usenet.
 - C. File Transfer Protocol.
 - D. World Wide Web.
44. To present tabular data to the user in HTML, the element to use is
- A. td.
 - B. li.
 - C. u.
 - D. table.
45. Which query command will a user adopt to answer the question, "Which student is below 15 years?"
- A. Cross tab query
 - B. Search query
 - C. Select query
 - D. Update query
46. When connecting an electrostatic discharge strap to an extension cord, it must be connected to the
- A. ground.
 - B. hot pin.
 - C. negative pin.
 - D. positive pin.
47. A male DB-25 port is **most** likely to be a
- A. game port.
 - B. network port.
 - C. parallel port.
 - D. serial port.
48. The maximum data rate that can be transmitted over UTP cat 3 cable is
- A. 10 Mbps.
 - B. 16 Mbps.
 - C. 32 Mbps.
 - D. 100 Mbps.
49. Over long distance transmissions, which of the following signals degrades the **most**?
- A. Analog transmission
 - B. Digital transmission
 - C. Parallel transmission
 - D. Serial transmission
50. Which of the following topologies is easier to modify when there is a breakage in a transmission cable?
- A. Bus
 - B. Ring
 - C. Star
 - D. Token Ring

END OF PAPER