

Candidate Name

Centre Number

Candidate Number



ZIMBABWE SCHOOL EXAMINATIONS COUNCIL
General Certificate of Education Ordinary Level

COMPUTER SCIENCE
PAPER 2 Structured

4021/2

NOVEMBER 2018 SESSION

2 hours 30 minutes

Candidates answer on the question paper.
No additional materials are required.

Allow candidates 5 minutes to count pages before the examination.

This booklet should not be punched or stapled and pages should not be removed.

TIME 2 hours 30 minutes

INSTRUCTIONS TO CANDIDATES

Write your Name, Centre number and Candidate number in the spaces at the top of this page and your Centre number and Candidate number on the top right corner of every page of this paper.

Answer **all** questions.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets [] at the end of each question or part question.

This question paper consists of 14 printed pages and 2 blank pages.

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1 (a) Define the terms below, giving **one** example.

(i) Hardware

[2]

(ii) Software

[2]

(b) List any **three** functions of a computer operating system.

1.

2.

3.

[3]

3

- 1 (c) Suggest any **three** applications of computers in agriculture.

1. _____

2. _____

3. _____

[3]

- (d) State any **three** areas where super computers can be used.

1. _____

2. _____

3. _____

[3]

4

- 2** (a) Define the term **Geographical Information System**.

[2]

- (b) State **five** components of an expert system.

1.

2.

3.

4.

5.

[5]

- 3** (a) Convert the following base 2 numbers to base 10.

- (i) 111010

[1]

- (ii) 101011

[1]

5

3 (b) Convert the following base 10 numbers to base 2.

(i) 76

[1]

(ii) 93

[1]

(c) Using the boolean expression

$$AB + \bar{C} = F,$$

(i) draw the corresponding logic diagram.

[3]

6

- (c) (ii) Complete the Truth Table for $AB + \bar{C} = F$.

A	B	C	AB	\bar{C}	$AB + \bar{C}$
0	0	0			
0	0	1			
0	1	0			
0	1	1			
1	0	0			
1	0	1			
1	1	0			
1	1	1			

[3]

- 4 Explain in detail the following network devices.

- (a) Router

[2]

- (b) Switch

[2]

- (b) Bridge

[2]

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- 5 (a) Explain the difference between **data verification** and **data validation**.

[2]

- (b) Suggest any **three** measures to safeguard data against cybercrime.

1.

2.

3.

[3]

- (c) File permissions can be used as security measure.

List any **five** file permissions.

1.

2.

3.

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5 (c) 4. _____

5. _____

[5]

6 (a) Describe any **three** services provided by the internet.

1. _____

2. _____

3. _____

[6]

(b) Explain the following network protocols:

(i) HTTP

[1]

9

(ii) TCP/IP

[1]

(iii) VoIP

[1]

7

(a) Describe the maintenance /review/evaluation stage of the system development life cycle.

[4]

(b) Explain any **three** testing strategies that are used in the development and testing stage.

1.

[2]

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7 (b) 2. _____

 _____ [2]

3. _____

 _____ [2]

8 (a) Compare and contrast the Repeat ----Until and While ---- Endwhile statements.

 _____ [4]

(b) Using the two looping structures given in (a), draw the flow charts/ diagrams representing them.

(i) Repeat--- Until While--- Endwhile

[6]

11

9 State **three** properties of a database package.

1. _____
2. _____
3. _____

[3]

10 A web page is made up of a number of essential parts, which contribute to the large whole.

Name any **four** essential parts of a web page.

1. _____
2. _____
3. _____
4. _____

[4]

11 Explain any **three** types of errors in programming.

1. _____

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11 2.

3.

[5]

- 12 (a) The table below represents an extract from a student file from a certain college.

SURNAME	FIRST NAME	REG. No.	SEX	DOB	AGE	ADD 1	ADD 2	ADD 2
TOM	JOHN	R001	M	20/03/83	16	T1 STR	BOX 72	MTRE
ROSA	JANE	RO07	F	19/04/84	17	M2 STR	BAG 7	HRE

- (i) Identify giving reasons, the field which can be used as a primary key.

Primary Key _____

Reason _____

[2]

13

- (i) Suggest two reasons why the age field is not necessary

Reason 1 _____

Reason 2 _____

[2]

- 12 (b) Describe how to use the database in order to search for all students born before 1980.

[3]

- 13 (a) Explain the meaning of the term **business ethics**.

[3]

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13 (b) Identify any **three** attributes of business ethics.

1. _____

2. _____

3. _____

[3]