



THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY
DEPARTMENT OF MATHEMATICS & COMPUTER SCIENCE

SECOND SEMESTER EXAMINATIONS – 2022

**FIRST YEAR BACHELOR OF SCIENCE IN COMPUTER SCIENCE AND
BACHELOR OF SCIENCE IN APPLIED MATHEMATICS**

**CS123 –ADVANCED INFORMATION & COMMUNICATION
TECHNOLOGY**

TIME ALLOWED: 3 HOURS

INFORMATION FOR CANDIDATES

1. Write your name and student number clearly on the front of the examination answer booklet.
2. You have 10 minutes to read this paper. You must not begin writing during this time.
3. This paper contains two parts, **PART A** and **PART B**. **Part A** consists of Multiple Choice questions worth 20 marks and **Part B** consists of Short Answer questions worth a total of 80 marks which totals to 100 marks. You should attempt all the questions.
4. All answers must be written in the examination answer booklets provided. No other written materials will be accepted.
5. Write all answers for **PART A** on one page. For **Part B**, start the answer for each question on a new page. Do not use red ink.
6. Notes, textbooks, mobile phones and other recording devices are not allowed in the examination room.
7. Cheating of any form is prohibited. If you're caught, cheating you will be **PENALIZED**.

MARKING SCHEME

Marks are indicated at the beginning of each question. Total mark is **100**.

PART A: Multiple Choice Questions.

[1 mark each = 20 Marks]

Make sure to answer all questions. Circle the correct answers for the questions provided below.

1. What does it mean to edit a document?
 - A. Write a new document.
 - B. Create a new Excel workbook.
 - C. Checking spellings, changing the font type, size and color.
 - D. Opening a new document.

2. When creating a new document, which of the two options below will be your last step?
 - A. Open a new document and save it.
 - B. Save a new document and create it.
 - C. Saving and printing.
 - D. Editing and saving.

3. You want to invite 100 of your friends to your 20th birthday party celebrations. Which is the fastest and easiest way to write and send the letters to your friends without having to do a lot of typing?
 - A. Create a database.
 - B. Create a list.
 - C. Do mail merging.
 - D. None of the above answers is correct.

4. In Excel spreadsheet, cell A7:B7 is referred to as a:
 - A. Cell value.
 - B. Cell range.
 - C. Cell block.
 - D. Cell name.

5. What is a Data Source?
 - A. A database.
 - B. A generic letter.
 - C. A list.
 - D. A generic letter and a list.

6. When mail merging, what are you merging?
 - A. A generic letter.
 - B. A database report.
 - C. A generic letter to a list.
 - D. A generic letter to a list and a database report.

7. The best definition of a spreadsheet cell is:
 - A. Where column and the cell reference meet.
 - B. The intersection point where a column and a row meet.
 - C. A single data entry.
 - D. A range of the cells.

8. In the Excel spreadsheet, what would be the best name you can provide for =Sum(A1:A5)?
- A. A formula.
 - B. A function.
 - C. A reference.
 - D. A range.

9. What would be the best name you would give for =A1+A2?
- A. Formula.
 - B. Function.
 - C. Reference.
 - D. Range.

10. What will the result when you run the VBA code below?

```
Private Sub say_helloworld_click ()  
  
Msgbox "Hi"  
  
End Sub
```

- A. MsgBox Hi.
 - B. Say helloworld.
 - C. Hi.
 - D. Hello.
11. Which Windows operating system is known by this codename "Whistler"?
- A. MS DOS.
 - B. Windows XP.
 - C. Windows 10.
 - D. Windows 2000.
12. What does this part of the code underlined, Sub Test () at the beginning of a Macro represents?
- A. Macro Name.
 - B. Function.
 - C. Procedure.
 - D. MsgBox.
13. Which Windows operating system, codenamed Vienna and formerly Black Comb, is a personal computer operating system?
- A. Windows 2000.
 - B. Windows NT.
 - C. Windows 7.
 - D. Windows Vista.
14. What type of program would you need if you are to run more than one program at a time?
- A. A boss program.
 - B. A manager program.
 - C. A sales program.
 - D. A control system program.

15. Which of the operating systems listed below was one of the first OS for personal computers?
- A. Windows 2000.
 - B. MS-DOS.
 - C. Windows NT.
 - D. Windows 95.
16. Which of these operating systems for personal computers, primarily uses the Command Line Interface?
- A. MS-DOS.
 - B. Mac OS.
 - C. Windows XP.
 - D. None of the above answers.
17. The phrase "Information Highway" commonly refers to:
- A. Network traffic.
 - B. Internet.
 - C. Intranet.
 - D. Internet protocol.
18. Which of the terms below fits this statement "A single, specific occurrence of an entity"?
- A. Attribute.
 - B. Instance.
 - C. Field.
 - D. Column.
19. Which of the terms listed below best matches this description, "A Key field that appears (usually) as a non-key field in one relation and as a key field in another relation"?
- A. Foreign Key.
 - B. Primary Key.
 - C. Record.
 - D. Field.
20. Which of the data models listed below is the oldest of the models?
- A. Flat file.
 - B. Network.
 - C. Hierarchical.
 - D. Relational.

SECTION B: SHORT ANSWER QUESTIONS

Question 21

[9 + (4 + 4 + 4) + 3 = 24 Marks]

- (a) Define the following terms.
- (i) Database.
 - (ii) Field.
 - (iii) Record.
 - (iv) Entity.
 - (v) Relationship.
 - (vi) Primary Key.
 - (vii) Foreign key.

- (viii) Parent Table.
- (ix) Child Table.

(b) Draw ERD (Entity relationship diagram) for each of the following rules, using the appropriate symbols. Make sure to use **crow notation** to indicate its relationship type.

- (i) A teacher teaches a student.
- (ii) A student take more than one subjects and a subject is taught to more than one students.
- (iii) A teacher teaches many students.

(c) Name the type of relationships that each of the rules in (b) represent.

QUESTION 22

[5 + 10 + 3 = 18 Marks]

- (a) Write the skeletal HTML code for a standard web page.
- (b) Correctly write the HTML code for the output displayed below.



(c) In HTML, there are three required tags that you will write when you are creating a webpage or a website. Can you write out these three required tags?

QUESTION 23

[4 + 1 + 2 + 2 = 9 Marks]

(a) Write a Macro code that will produce the output shown below. Name of the macro is Test.



- (b) What is an Excel Macro?
- (c) Name the two main types of procedures.
- (d) Define the types of procedures you've named in (c) above.

QUESTION 24

[6 + 1 + 5 = 12 Marks]

- (a) List three advantages and three disadvantages of having ICT in our daily lives as students.
- (b) What is software piracy?
- (c) List an advantage each for having ICT in employment, education, home, medicine and banking.

QUESTION 25

[2 + 6 + 3 + 2 + 1 + 1 + 1 + 1 = 17 Marks]

- (a) One benefit of a well configured computer network is security of information. Explain how this is beneficial.
- (b) Better communication is one of the benefits of computer network. Could you provide or mention the three basic modes for better communication and an example each for these modes?
- (c) Apart from mesh network topology, name the other three network topologies.
- (d) Name the two types of mesh network topologies.
- (e) Define what an Internet is.
- (f) What is an Internet browser?
- (g) What is the role of an Internet web browser?
- (h) Which protocol makes it possible to make webpages available for surfing?

END OF EXAMINATION