

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

FIRST YEAR EXAMINATION FOR THE AWARD OF
DEGREE IN BACHELOR OF ELECTRICAL & ELECTRONIC ENGINEERING

COSC 121: COMPUTERS FOR ENGINEERING APPLICATIONS

STREAMS: YEAR1 SEMESTER 1

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 16/12/2020

2.30PM – 4.30 PM

INSTRUCTIONS

Answer **ALL** the questions in **section A** and choose any two in **section B**.
All questions in **section B** carry equal marks.

SECTION A (30 MARKS)

Answer all questions in this sections:

Question 1

- a) Outline **two** examples of softcopy devices. (2 marks)
- b) Outline **three** functions of operating system. (3 marks)
- c) Outline **four** ways of starting a word processing program in a window based environment. (4 marks)
- d) With the aid of a diagram, describe the data processing cycle (4 marks)
- e) Differentiate between thesaurus and spelling and grammar features as used in word processing programs. (3 Marks)
- f) With the aid of an example. Explain the term input mask as used in databases. (2 marks)
- g) Distinguish between *filtering* and *sorting* as applied in spreadsheet. (2 Marks)

h) Explain **two** ways in which computer virus can be controlled. (2 marks)

i) convert the following binary numbers to its equivalent decimal numbers

a. 111101.1111_2

b. 11111111011_2

(4 Marks)

j) Study the following extract and then answer the question that follows:

DECISION MAKING

Decision making refers to picking one option from among other options – derived from Latin word ‘**decido**’ which means to **cut off**. **A decision** is settlement , a fixed intention of bringing about a conclusive result as a judgement and a resolution. **A decision is a choice out of the several options made by the decision maker in order to achieve some objective in a given situation** | Decision making is indispensable component of the management process .R. C. Davids says Management **is** a decision making process. Haynes and Massie- a decision is a course of action which is consciously chosen for achieving a desired result .Oxford dictionary – the action of carrying out or carrying into effect.



Characteristics of decision making

1. **Implies choice**
2. **Continuous process**
 - **ESSENCE OF MANAGEMENT**
 - **SITUATIONAL IN NATURE**

Identify eight formatting features applied in the extract.

(4 marks)

SECTION B (40 MARKS)

Choose any of the two questions out of the three. All questions carry equal marks.

Question 2

- a) State **four** examples of utility software as used in computers. (2 marks)
- b) Outline the procedure that could be used to add borders on a worksheet. (2 marks)
- c) Peter realized the following errors displayed in a worksheet she was working on spreadsheet
 - i. #DIV/0!
 - ii. #####

Identify the possible cause for each of the errors (2 marks)

- d) Distinguish between a *function* and *formula* as used in spreadsheet programs (4 marks)
- e) Distinguish between *cut* and *paste* features as applied in word processing programs. (2 marks)
- f) With the aid of an example explain absolute cell referencing as used in worksheets. (4 marks)
- g) With the aid of sketches outline **four** types of columns that can be applied in a word processing document. (4 marks)

Question 3

- a) Outline **two** types of queries that can be used in databases (2 marks)
- b) Carlo would like to use the mail merge feature to create customized letter to his friends. Outline **three** files that would be created. (3 marks)
- c) compare 1st and 3rd generation computers in terms of
 - i. storage
 - ii. processor technology (4 marks)
- d) Distinguish between *workbook* and *worksheets* as applied in spreadsheet programs. (4 Marks)
- e) Study the following extract created using word processing program and then answer the question that follows

Table1

	A	B	C	D	E	F	G
1	GRADUATES FROM BIDI POLYTECHNIC						
2	DEPARTMENTS/YEARS	2000	2001	2002	2003	2004	TOTALS
3	Electrical Engineering	3900	3099	4700	4950	4500	
4	Business	5888	5377	4955	5675	5342	
5	Building	1900	1670	1500	1700	1676	
6	Science	2600	2660	2550	2200	3500	
7	Music	390	450	421	507	651	
8	Total Graduates						
9							
10	Average						
11	Least No. Of graduates						
12	Highest no .Of Graduates						
13	No.Of Departments						
14							

Using cell addresses only and appropriate functions compute: (4 Marks)

- a. The total number of graduates per department
- b. The total number of graduates per year
- c. Least number of graduates per year
- d. Number of departments in the institute
- f) Write the general format of the IF function in a typical spreadsheet program.

(3 marks)

Question 4

- a) State **two** characteristic of the main memory. (2 marks)
- b) Distinguish between *multiprogramming* and *multiprocessing*. (4 marks)
- c) Describe **two** main components of a computer central processing unit. (4 marks)
- d) With the aid of a diagram, describe a Metropolitan Area Network. (4 Marks)

e) Answer the following questions based on the structure of the table Student given below:

Table: **Student**

Adm_No	Name	DOB	Percentage
A101	Sujata	09/08/1984	78
A102	Anju	12/07/1983	82
A103	Ananth	07/08/1984	67

- i. Suggest the data types that should be used for each of the fields in the above table. (4 marks)
- ii. Suggest a field from the above table, which can be set as the primary key and justify your answer. (2 marks)

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