

Computer Science

Note: Time allowed for Section-B and Section-C is 2 Hours and 40 minutes.

SECTION-B

Q2: Answer any TEN parts. Each part carries FOUR marks.

- 1) Define operating system. List down at-least three functions of operating system.
- 2) Elaborate Multiprocessor Operating System. Explain its advantages.
- 3) Explain the 5-states process model that an operating system applies to manage the execution of processes.
- 4) Differentiate between Multitasking and Multiprogramming Operating System.
- 5) Consider the following algorithm. Draw flowchart representing the steps outlined in the algorithm.
(i) Read three (03) inputs from user (ii) Add the values
(iii) Average = sum/3 (iv) Display the Average
- 6) Write down at-least four differences between the constructor and destructor.
- 7) Describe the setw manipulator in C++. Specify the header file required for setw and demonstrate its usage with C++ program.
- 8) Discuss Member Access Specifiers in C++ language.
- 9) Define Function in C++ list three essential components for using the user-defined function.
- 10) Describe the concept of inheritance in C++ language and provide a C++ program to illustrate its implementation.
- 11) Discuss if-else structure. Write its syntax; create a flowchart for if-else.
- 12) Write a C++ program with a user-defined function named sum(), for adding two values and returns the result to main () functions.
- 13) Discuss function overloading. Provide an example in C++ language.

SECTION-C

Note: Attempt any TWO questions. All questions carries equal marks.

Q3: (a) Define loop in C++ language. Write syntax for while loop and for loop.

(b) Write a C++ program to display the multiplication table of a given number upto ten (10).

$$2 \times 1 = 2$$

$$2 \times 2 = 4$$

Sample:

$$2 \times 10 = 20$$

Q4: (a) Define Array and discuss its two main types. Describe how to declare and initialize both types.

(b) Write a C++ program based on the following instructions.

(i) Take Six (06) integer values from user

(ii) Store them in Array (iii) Display the sum

Q5: (a) Define class and object.

(b) Write a C++ program with the following specification;

(i) Create a class "Marks" with three data members for storing marks of three subjects.

(ii) Create three member functions;

(a) Input () to enter marks of 3 subjects

(b) Sum () to add and return total marks

(c) avg () to find and return average of three subject marks