

B.E./B.TECH. Degree Examination, December 2020

First Semester

GE16151-COMPUTER PROGRAMMING

(Regulation 2016)

Time: Three Hours**Maximum : 80 Marks**Answer **ALL** questions**PART A - (8 X 2 = 16 Marks)**

1. Which of the following are the ways to represent an algorithm?
(a) Flow chart (b) pseudo- code (c) Program (d) all the given
2. In which of the following process includes the components of header files as a part of C program?
Loading (b) Linking (c) Compiling (d) execution
3. Which of the following statements initializes a one dimensional array of five elements to zero?
(a) `int a[] = {0,0,0,0,0};`
(b) `int a[5] = {0,0,0,0,0};`
(c) `int a[5] = {0};`
all the given
4. Which of the following statement is invalid in C programming language?
(a) `int *p = &a; // where a is an integer variable declared earlier`
(b) `arr++; // where arr is an integer array variable declared earlier`
(c) `ptr1 - ptr2; //where ptr1 and ptr2 are pointer variables`
`ptr+= 5; //where ptr is a pointer variable`
5. Draw a flow chart to find the maximum digit in a number.
6. Write a C program to check if a given number is an exact power of two.
7. Justify why string literals initialized using pointers are immutable.
8. Write a recursive function for linear search.

PART B - (4 X16 = 64 Marks)

9. (a) (i) Write a C program to print the number of days in a month of a given month and year. Input: Month:7,2017 output: 31 Input 2, 2020 output: 29 **(8)**
(ii) Write a C program to swap three numbers in cyclic fashion. Input: a = 5, b=7, c= 10; Output: a = 7, b = 10, c = 5 **(8)**

(OR)

- (b) (i) Write a C program to print the following pattern **(8)**

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

- (ii) Write a C program to generate the first 100 positive multiples of three and five. **(8)**

10. (a) You are given with the sales made by ten employees each of branches Chennai and Coimbatore of ABC company in five months separately. The MD wishes to calculate the total sales made the company in five months. As a developer of the company, write a C program to calculate the same. **(16)**

(OR)

- (b) Write a C program to read a sentence, and print the sentence as a single word (Remove spaces between the words). **(16)**

11. (a) Justify how functions in a C program enable modular programming. Illustrate your argument with examples. **(16)**

(OR)

- (b) Justify the need of pointers. Illustrate your argument with a scenario where the usage of pointers is advantageous over its absence with an example. **(16)**

12. (a) You are given the details of N books each with an Access Number, Title, and Price. Post annual stock verification the librarian has a collection of M access numbers which are available in the library (where $M \leq N$). Write a C program that finds the details of missing books. **(16)**

(OR)

- (b) You are given the details of N employees each with an Aadhar Number, Name, and Age. Write a C program to sort the employee details based on their Name. **(16)**