

B.TECH
(SEM I) THEORY EXAMINATION 2012-23
COMPUTER SYSTEM AND PROGRAMMING IN C

Time: 3 Hours**Total Marks: 70**

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.
 2. Any special paper specific instruction.

SECTION A**1. Attempt any seven of the followings.****2 x 7 = 14**

- (a) Explain the classification of computers.
- (b) Differentiate between Compiler and Interpreter.
- (c) Define Linker and loader and explain their role in C programming.
- (d) What do curly braces pair "{'}'" denote in 'C'?
- (e) Define the term Identifier and keywords with examples.
- (f) Why the break statement is essential in the switch statement?
- (g) What is Flowchart? Explain different symbols used in it.
- (h) Write the difference between structure and union.
- (i) What is void pointer? How is it different from other pointers?
- (j) Define preprocessor and its usage in programming

SECTION B**2. Attempt any three of the following:****7 x 3 = 21**

- (a) Describe various storage classes in C with suitable examples. Also give their significance.
- (b) Write difference between implicit and explicit type casting.
- (c) Write a program in C to find whether the given number is Prime or not.
- (d) What do you mean by strings? State some library functions for strings manipulation.
- (e) What do you mean by C preprocessor? Give example of any two pre-processor directives.

SECTION C**3. Attempt any one part of the following:****7 x 1 = 7**

- (a) Define the operating System. What are the functions of Operating System?
- (b) Explain basic data types in C in terms of memory size, format specifier and their range.

4. Attempt any one part of the following:**7 x 1 = 7**

- (a) What is the use of bitwise operators? Describe any two bitwise operators with example.

(b) Convert the following numbers:

- | | | |
|-------|------------------------|--------------|
| (i) | $(745)_{10}$ | $= ()_2$ |
| (ii) | $(101010.10001)_2$ | $= ()_{16}$ |
| (iii) | $(ACD)_{16}$ | $= ()_{10}$ |
| (iv) | $(10111011.1101101)_2$ | $= ()_8$ |
| (v) | $(1101)_2$ | $= ()_{10}$ |

5. Attempt any *one* part of the following:

7 x 1 = 7

- (a) What do you mean by call by value and call by reference? Write a program for swapping two numbers using call by value and call by reference.
- (b) Write program in C to generate the Fibonacci series up to the last Fibonacci number less than 100.

6. Attempt any *one* part of the following:

7 x 1 = 7

- (a) Create a structure to store the information about the employees of a company. List all the employees getting the salary greater than one lakh.
- (b) Write a program in C for matrix multiplication.

7. Attempt any *one* part of the following:

7 x 1 = 7

- (a) What are the merits and demerits of static and dynamic memory allocation techniques?
- (b) List out various file operations in 'C'. Write a C program to count the number of characters in a file.