B. Tech.  
(SEM. I) (ODD SEM.) THEORY EXAMINATION, 2014-15  
COMPUTER SYSTEM & PROGRAMMING IN C  

Time : 3 Hours]  
[Total Marks : 100

1. Attempt any FOUR parts : 5x4 = 20

(a) What are the classifications of computer? Explain any two in detail.

(b) Describe the functionalities of an operating system.

(c) Convert the hexadecimal number A9C5.DB4\( _{(16)} \) to octal number.

(d) Draw a flowchart to find the sum and reverse of a given number.

(e) Discuss the various functionalities of compiler, linker and loader.

(f) What is storage class? Describe automatic, register, static and external with neat syntax.
2 Attempt any TWO parts:
(a) Describe about the basic components of computers with a neat block diagram.
(b) Explain logical and bit operators with example.
(c) Write about the formatted and unformatted Input / Output functions in 'C'.

3 Attempt any TWO parts:
(a) Describe about the types of looping statements in 'C' with necessary syntax.
(b) Write a C program to find the multiplication of two matrices.
(c) What are the types of function? Write a C program to find the factorial of a given number using recursion.

4 Attempt any TWO parts:
(a) How to declare an array? Explain about various operations of an array.
(b) What is enumerated data type? Write a C program to display months in the year using enum.
(c) Differentiate structure and union in 'C'. Write a C program to store the student details using union.
Attempt any TWO parts:

(a) State the features of pointers. Write a ‘C’ program to sort a given number using pointers.

(b) What is the difference between break and continue in C? Describe the structure of switch-case with neat example.

(c) List out various file operations in ‘C’. Write a C program to count the number of characters in a file.