Reg. No.

Question Paper Code : **57235**

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016

Second Semester

Computer Science and Engineering

CS 6202 – PROGRAMMING AND DATA STRUCTURES – I

(Common to Information Technology)

(Regulations 2013)

Time : Three Hours   Maximum : 100 Marks

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. What is pointer of pointer ? Give Example.

2. Write the difference between while and do-while loop.

3. Write a C program to read a single character from a file.

4. Differentiate between random access and sequential access file.

5. Define ADT.

6. What is circular linked list ?

7. Given the infix for an expression, write its prefix a*b/c+d.

8. How do you define double ended Queue ?

9. What is the time complexity of the insertion sort ?

10. What is hashing ?

PART – B (5 × 16 = 80 Marks)

11. (a) Explain in detail about variable number of arguments with an example. (16)

OR

(b) What is function pointer ? Write a C program to add two matrices using function pointer. (16)

12. (a) (i) Write a C program to read the contents of a file "input.txt" and write the contents to "output.txt". (8)

(ii) Explain in detail about random access file concept with an example. (8)

OR

(b) Explain in detail about structure with suitable example. (16)

13. (a) Write C code for singly linked list with insert, delete, display operations using structure pointer. (16)

OR

(b) Illustrate the algorithms to implement the doubly linked list and perform all the operations on the created list. (16)

14. (a) (i) Develop an algorithm to implement Queue ADT.Give relevant examples and diagrammatic representations. (12)

(ii) Differentiate between double ended queue and Circular queue. (4)

OR

(b) (i) Write an algorithm to convert the infix expression to postfix expression. (10)

(ii) Show the simulation using stack for the following expression to convert infix to postfix : p*q+(r-s/t). (6)

15. (a) Explain the following :

(i) Binary searching (8)

(ii) Rehashing (8)

OR

(b) Sort the following integer elements using Quick Sort 40,20,70,14,60,61,97,30 (16)

_____