2017

MCA

2nd Semester Examination

DATA STRUCTURE LAB

PAPER—MCA-206

(Practical)

Full Marks : 100

Time : 3 Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer any *one* question (*On Lottery basis*).

1. Write a C program to create a stack, and using this stack check that whether an inputted string is palindrome or not.   70

2. Write a C program which using a stack solve the following

mazing problem, when 's' is starting point and 't' is target.

s ⓪	0	1	0	1	1
1	0	0	1	1	1
1	0	0	0	1	0
0	1	1	0	1	0
0	1	1	1	0	0
1	1	1	1	1	⓪ t

70

3. Write a C program, using array add this two polynomials,

$$x^5 + 3x^3 + 2x^2 + 9x + 7$$
$$x^9 + 7x^4 + 3x^3 + 5x^2 + x + 19 \cdot$$

70

4. Using linked list add two polynomials, in a C program,

$$x^3 + 3x^2 + 2x + 5$$
$$2x^3 + 9x + 21 \cdot$$

70

5. Write a C program to insert "cat" in an alphabetically ordered linked list which already contain, "ant", "bat", "mat", "rat", "sat".

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6. Write a C program to create a circular queue of 10 elements, then insert 2, 9, 7, 8, 5, 1, 7, 2. Then delete 8 and 1. Then insert 5, 9, 2, 1.

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7. Write a C program to find out number of viowels in a file.

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8. Write a program in C to form a linked list of floating point numbers. Display the sum and mean of these numbers.

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9. Write a C program to find out the infix of the postfix string (using stack) :

abc * + dc / h * −

70

10. Write a C program to find the postfix string of the infix string (using stack) :

a + b * c − d / e * h

70

11. Write a C program to create a doubly linked list and insert, 'a', 'b', 'c', 'd', 'e'. Then delete 'c' from this list.

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12. Write a program in C to implement selection sort using linked list.

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13. Write a C program which takes a string s1 and check the first position of the substring s2 within s1.

70

14. Write a C program which takes a string s1 and print all starting positions of the substring s2 within s1.   70

15. Write a program in C to implement a queue using linked list.   70

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Viva-Voce —   20

Practical Note Book —   10

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