

Code No: MC1311/R13

MCA I Semester Supplementary Examinations, January-2018**C PROGRAMMING AND DATA STRUCTURES****Time: 3 Hours****Max. Marks: 60**

*Answer Any FIVE Questions
All Questions Carry Equal Marks*

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| 1. a | Write an algorithm and flowchart to compute roots of quadratic equation | 6m |
| b | Define a data type. Mention the different data types supported by C language, giving an example to each. | 6m |
| 2. a | Compare and contrast between if-else and switch –case statements | 6m |
| b | What is an array? Explain different methods of initialization of single dimensional arrays | 6m |
| 3. a | List four differences between while loop and do-while loop along with syntax and example | 4m |
| b | How string is declared and initialized? Explain any FOUR string manipulator function with example | 8m |
| 4. a | Compare and contrast actual and formal parameters. | 6m |
| b | Develop a C program to read two number and a function to swap these number using pointers | 6m |
| 5. a | How to pass arrays as parameters to functions? Explain with an example. | 6m |
| b | How structure is different from an array? Explain declaration of a structure with an example | 6m |
| 6. a | Write and explain an algorithm for the implementation of binary search. | 6m |
| b | Sort the following sequence of numbers using Insertion sort : 14,18,1,2,9,6,7,3 | 6m |
| 7. a | Give the advantages and disadvantages of doubly linked lists over single linked lists. | 6m |
| b | Write an algorithm to convert infix expression to postfix expression. | 6m |
| 8. a | Compare and contrast DFS and BFS. | 6m |
| b | Write Kruskals algorithm to find the minimum cost spanning tree | 6m |
