

Code No: MC1611/R16

MCA I Semester Regular/Supplementary Examinations, January-2018

C PROGRAMMING AND DATA STRUCTURES

Time: 3 Hours

Max. Marks: 60

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*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 |

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