

**Code No: MC1611/R16**

**MCA I Semester Supplementary Examinations, February-2020**

**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 | What is an algorithm? How to design an algorithm?                                 | 6M |
|    | b | What are bitwise and logical operators? Explain with suitable programming example | 6M |
| 2. | a | Explain in detail about various control structures in C.                          | 6M |
|    | b | Write notes on Operators and Expression evaluation in C.                          | 6M |
| 3. | a | Write a C program to find the factorial of a given number using recursion         | 6M |
|    | b | Explain the advantages of functions in C language                                 | 6M |
| 4. | a | What is an Array? How to define and declare 2-D array explain with an example     | 6M |
|    | b | Write and explain various string handling functions in 'C'.                       | 6M |
| 5. | a | Define pointer. How to pass an address to functions give an example.              | 6M |
|    | b | Write short notes on pointer to pointer and array of pointers.                    | 6M |
| 6. | a | Explain any three output functions of the file.                                   | 6M |
|    | b | Write a program to copy one file to another file                                  | 6M |
| 7. | a | Define a Stack and their Application?   | 5M |
|    | b | Write a C Program explain the linked list implementation of Stack?                | 7M |
| 8. | a | What is meant by graph? Write a program in C++ to implement a graph               | 6M |
|    | b | Explain Kruskal's algorithm   | 6M |

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