

**Code No: 861AC****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****MCA I Semester Examinations, October/ November - 2020****COMPUTER PROGRAMMING AND DATA STRUCTURES****Time: 2hrs****Max.Marks:75**

**Answer any five questions**  
**All questions carry equal marks**

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- 1.a) Demonstrate various arithmetic and relational operators available in C language.
- b) What is the significance of declaring a constant as unsigned? Explain various types of constants available in C. [7+8]
- 2.a) What is the need of 'break', 'continue' and 'goto' statements in C? Illustrate with an example C program.
- b) Illustrate the differences between 'while' and 'do-while' loops in C. [7+8]
- 3.a) Explain with the help of a suitable example the use of pointers to functions.
- b) List and explain various string manipulation functions available in C. [7+8]
- 4.a) What are self-referential structures? Explain briefly.
- b) Illustrate the use of pointers to structures using a C program. [7+8]
- 5.a) Discuss briefly about binary search with an example program in C.
- b) Write a C program to sort list of integers using selection sort. [7+8]
- 6.a) What are the symbols used in a flow chart for solving a problem? Give an example flow chart for solving the factorial of a number.
- b) Describe various computing environments with neat diagrams. [7+8]
- 7.a) Explain various pre-processor commands available in C.
- b) Describe all variants of selection statements with flow-chart, syntax and example C code. [7+8]
- 8.a) Demonstrate call-by-value and call-by-reference methods with C program.
- b) Explain how a multidimensional array is created and implemented in C. [7+8]

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