BS/2110 5224/NH

Total No. of sheet used : [redacted]
Subject : **C Programming and Data Structures**
Class : [redacted]**. (Computer Applications) 3rd Semester**
Paper : **BAP--201**
Title of Paper : **C Programming and Data Structures**
Time Allowed : **3 Hours**
Maximum Marks: 45

Note: Candidates are required to attempt five questions in all selecting at least two questions each from sections A and B. Section C is compulsory.

SECTION A

Q1. What are decision control statements in C? Explain in detail giving suitable examples. 9

Q2. What are the various input/output functions available in 'C' for characters? Give example of each function. 9

Q3. Define functions. What are the advantages of using functions? What do you mean by function declaration and function definition? What are the various methods of parameter passing to function? Explain. 9

Q4. What is a structure and what are its uses? Differentiate between structure declaration and structure initialization. How are data elements of a structure accessed and processed? 9

SECTION B

Q5. Discuss in brief the uses of data structures. Differentiate between linear and non-linear data structures. 9

Q6. What do you mean by an array? What are linear arrays? How linear arrays can be traversed? Discuss in detail. 9

Q7. Define a queue data structure. Write an algorithm to insert and delete an element from a linear queue. 9

Q8. What do you mean by binary search? How it is different from linear search? Explain the procedure of binary search with suitable example. 9

SECTION C

Q9. a) What are various data types supported by C language and give the memory requirement of each data type? 1.5

b) What do you mean by nested loop? 1.5

c) What are the uses of pointers? 1.5

d) What do you mean by Big 'O' notation? 1.5

e) What are sparse arrays? 1.5

f) Compare bubble sort with selection sort. 1.5