BS/2110

10386/NH

Total No. of sheet used : 01 Total No. of Questions: 09
Subject : C Programming and Data Structures
Class : B.A/B.Sc (Computer Science) Semester III
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 and the entire section C.

SECTION A

Q1. What are various ways to read a character? Discuss in detail giving suitable examples? How all these are different from each other? 9

Q2. What is meant by lifetime and scope of variables and explain the various types of storage classes. 9

Q3. What do you mean by structure? How structures are different from union? Explain with the help of suitable examples. 9

Q4. Write a program to print the palindrome numbers between any two given numbers. 9

SECTION B

Q5. Define data structures. What is the use of data structures? Also discuss algorithmic complexity and time space tradeoff. 9

Q6. What do you mean by array? What are the advantages and disadvantages of using arrays? How a two dimensional array is stored in memory? Explain with suitable examples. 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 searching? What are various searching techniques? Discuss any one in detail giving its advantages and disadvantages over the others. 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) Differentiate between break and continue statement. 1.5

c) What are the uses of pointers in C? 1.5

d) What is sparse array? 1.5

e) Differentiate between stack and queue data structure. 1.5

f) Compare bubble sort and selection sort. 1.5