NagpurStudents

www.nagpurstudents.org

B.E. (Computer Science & Engineering) (New) Third Semester (C.B.S.)

Advanced C & Programming Logic Design

P. Pages : 2 **NRT/KS/19/3323**

Time : Three Hours * 0 1 9 3 * Max. Marks : 80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data whenever necessary.
10. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Can we create array of structure in 'C'? Justify your answer with example. **7**

b) Differentiate between structure and union. **6**

OR

2. a) Write a 'C' program to add two matrices & store the result in third matrix. **7**

b) Write a program to reverse string without using string handling function. **6**

3. a) Explain various error handling functions in file. **6**

b) Differentiate between text and binary modes of a file? Also explain different file opening modes. **7**

OR

4. a) Explain following I/O functions: **6**
i) fputc ( ) ii) fgetc ( )
iii) ftell ( )

b) Explain command line argument with suitable example. **7**

5. a) Compare static & dynamic memory allocation with example. **7**

b) Explain situation where we use. **7**
i) Pointer within structure.
ii) Pointer to structure.

OR

6. a) Write a program to print smallest number in an array using pointer. **7**

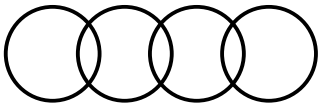
b) What is pointer ? State it's advantages. Also give details of pointer arithmetic. **7**

7. a) Write a menu driven program to draw rectangle, circle, ellipse & arc on the screen. **8**

b) Explain the following functions: **6**
i) initgraph ( ) ii) closegraph ( )

OR

8. a) Write a program using 'C' graphics to draw following symbol. **7**



b) Write a 'C' program to draw a polygon passing through the points as follows and also fill with colour 'RED'. (150,150) (210,100) (180,200) (120,200) and (100,120) **7**

9. a) Explain notion of algorithm. **3**

b) Define model of computation? List and explain various models of computation. **7**

c) Explain functional programming. **3**

OR

10. a) Prove the following by mathematical induction. **7**

$$1^2 + 2^2 + 3^2 + ------ + n^2 = \frac{n(n+1)(2n+1)}{6}$$

b) On what parameters algorithms are evaluated ? Explain those parameters. **6**

11. a) Explain Imperative and declarative programming with suitable example. **7**

b) Explain Assertion and loop invariants in detail. **6**

OR

12. a) List and discuss various features of object oriented programming. **7**

b) Create a class student having data members roll no, name, branch & marks in 4 subjects. Write appropriate function to read and display the value of data members. Also create a function to calculate result of a student in terms of percentage, grade and pass or fail. Depending on marks scored in 4 subjects. **6**

****

www.nagpurstudents.org

Itâ€™s hard to beat a person who never gives up.

~ Babe Ruth