C

Question Paper Code : U1207

B.E./B.Tech. DEGREE EXAMINATION, NOV 2023

First Semester

Civil Engineering

21UCS107- PROBLEM SOLVING AND C PROGRAMMING

(Common to ALL branches)

(Regulations 2021)

Duration: Three hours   Maximum: 100 Marks

PART A - (5 x 1 = 5 Marks)

1. Which of the following provides step by step procedure for solving a problem?   CO1-U

    (a) Flow chart   (b) Algorithm   (c) Program   (d) Pseudo code

2. What is the output of the following code segment?   CO2-App
   Void main ()
   {
   int n = 7;
   printf("%d%d%d",n++,n,n--);
   }
   (a) 6 6 7   (b) 6 7 7   (c) 7 7 8   (d) 8 8 7

3. Which statement is used to terminate the control from the loop?   CO1-U

    (a) break   (b) go to   (c) exit   (d) all the above

4. In an array x[10], the x represents the   CO1-U

    (a) base address   (b) base value   (c) void pointers   (d)None of the above

5. The following program will display _____.   CO2-App

    void main( )
    {
    int t = 2, *p;
    p = &t;
    printf("%u",p);
    }
    (a) address of P   (b) value of P   (c) error message   (d) None of the above

6. Draw a flowchart to represent the following scenario: You are going trucking   CO2-App in a forest and halfway through, you feel very hungry. There is a placard showing two directions: one to a river and one to a tea shop. Select the correct path.

7. Write Short notes on different types of data types in C.   CO1-U

8. Write a C program to determine the whether a person is eligible to vote.   CO2-App

9. What is recursion? List out the advantages.   CO1-U

10. With the syntax explain the malloc() function.   CO1-U

PART – C (5 x 16 = 80 Marks)

11. (a) Draw a block diagram to illustrate the basic organization of   CO1-U   (16) computer system and explain the functions of various units.

Or

(b) (i) Explain various phases involved in problem solving.   CO1-U   (8)

(ii) With suitable example, explain about flowchart.   CO1-U   (8)

12. (a) Write a program to solve quadratic equation and compute all   CO2 App   (16) possible roots with flowchart.

Or

(b) Distance between two points(1,y1) and (2,y2) is governed by the   CO2 App   (16) formula
D = (2 - 1) / 2 + (y2-y1)/2. Write a C program to compute D given the coordinates of the points.

13. (a) Admission to a professional course is subject to the following   CO2 App   (16) conditions:
(i) Marks in Mathematics >= 60
(ii) Marks in Physics >= 50 and Chemistry >= 40
(iii) Total in all Three Subjects >= 200
(iv) Total in Mathematics and Physics >=150
Given the marks in three subjects, Write a C program to process the application to list the eligible candidates.

Or

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(b) Write a C program to display the traffic control signal lights   CO2 App   (16)
based on the following.
(i) If user entered character is 'R' or 'r' then print "RED Light
Please STOP".
(ii) If user entered character is 'Y' or 'y' then print "YELLOW
Light Please Check and Go".
(iii) If user entered character is 'G' or 'g' then print "GREEN Light
Please GO".
(iv) If user entered some other character then print "THERE IS
NOSIGNAL POINT".

14. (a) (i) Explain any four string handling functions with suitable   CO1-U   (8)
example.
(ii)Write a C program to concatenate any two given strings.   CO2-App   (8)
Or
(b) (i) Differentiate pass by value and pass by reference with suitable   CO1-U   (8)
example.
(ii) Write a function which is used to increment an integer using   CO2 App   (8)
call by reference method.

15. (a) Write a C program to read and display the information of all the   CO2- App   (16)
students in a class using array of Structures.
Or
(b) Write a program to find the sum of elements in an array using   CO2- App   (16)
pointers.

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