11N508

Roll No. _____

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B. Tech. I - Sem. (New Scheme) Main Exam., July – 2022

1FY2 – 08 Computer Fundamentals & Programming (CSE)

Common to all Branches

Time: 2 Hours

Maximum Marks: 70

Min. Passing Marks:

Instructions to Candidates:

Part – A: Short answer questions (up to 25 words) 5×3 marks = 15 marks. Candidates have to answer 5 questions out of 10.

Part – B: Analytical/Problem Solving questions 3×5 marks = 15 marks. Candidates have to answer 3 questions out of 7.

Part – C: Descriptive/Analytical/Problem Solving questions 2×20 marks = 40 marks. Candidates have to answer 2 questions out of 5.

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL

2. NIL

PART– A

Q.1 What do you mean by the component of computers? Explain with a diagram.

Q.2 What do you mean by input and output devices? Write down the name of any 4 input and 4 output devices.

Q.3 What is the difference between System Software and Application Software? Write down the name of any 2 system software and 2 application software.

Q.4 What do you mean by Cache memory, and why it is crucial in the memory system?

Q.5 What is the difference between complier and interpreter?

Q.6 Draw a flowchart to find the minimum of 4 numbers.

Q.7 Convert $(242)_{10}$ into hexadecimal.

Q.8 Subtract 11012 and 10102.

Q.9 Write down all output/errors (if any with justification) of the following C programs-

```
#include<stdio.h>
#include<stdlib.h>
int main()
{
 int i = 0;
 for(i=0; i < 3; i++);
 {
  printf("loop");
  continue;
 }
getchar();
return 0;
}
```

Q.10 Explain the concept of Array in C.

PART– B

Q.1 Convert the following numbers:

(i) $(1056)_{16} = (?)_8 = (?)_2$

(ii) $(5C6)_{16} = (?)_{10} = (?)_8$

(iii) $(10111)_2 = (?)_{10} = (?)_8$

(iv) $(74524)_8 = (?)_2 = (?)_{10}$

Q.2 Explain the concept of While Loop in C with an example.

Q.3 Write a C program to display the following patterns:

```
* * * * *
* * * *
* * *
* *
*
```

Q.4 What is a far pointer in C? How is it different from near pointer? Explain with an example.

Q.5 What do you mean by fundamental or primitive data types used in C, and how does it differs from derived data types used in C? Write down the most commonly used primitive and derived data types available in C.

Q.6 Write a program in C to find the sum of the series 1!/1+2!/2+3!/3+4!/4+5!/5 using the function.

Q.7 Write a program in C to convert decimal numbers to binary numbers using the function.

PART–C

Q.1 Write down a program in C to find the number of vowels and consonants in a text string.

Q.2 Explain the concept of structures used in C. Write a C program to create students mark sheet (student's name, roll number and marks of 10 subjects) for 100 students. The program should be able to calculate the subject-wise and student-wise totals.

Q.3 Explain the concept of the 1-D and 2-D array in C. Write a C program to perform a matrix multiplication operation.

Q.4 Write a program in C using pointers to add two matrices and return the resultants matrix to the calling function.

Q.5 Write a program in C to read data from the keyboard, write it to a file called INPUT, again read the same data from the INPUT file and display it on the screen.
