1E3106

Total No. of Questions : 22 Total No. of Pages : 03

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1E3106

B.Tech. I-Sem. (Main/Back) Exam. - 2024

IFY3-06 / Programming for Problem Solving

Time : 3 Hours **Maximum Marks : 70**

Instructions to Candidates :

Attempt all ten questions from Part-A, five questions out of seven questions from Part-B and three questions out of five questions from Part-C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing 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. ..... 2. .....

PART-A **[10x2=20]**

(Answer should be given up to 25 words only)

All questions are compulsory

Q.1. With the help of diagram, explain how RAM, ROM and CPU interact with each other.

Q.2. Explain how read/write operation is carried out in an optical disk.

Q.3. What do you understand by software? Discuss its types.

Q.4. Define Flowchart. List any important reason for using flowcharts.

Q.5. What are the advantages and disadvantages of using a Pseudocode?

Q.6. Show by an example that we can subtract both positive and negative number by 2's complement Arithmetic?

Q.7. Why is C language called Middle Level Language?

Q.8. What is dynamic initialization?

Q.9. Differentiate Excess-3 BCD and Common BCD with suitable example.

Q.10. Find out the 7's complement of this number : $(157)_8$.

PART-B **[5x4=20]**

(Analytical/Problem solving questions)

Attempt any five questions

Q.1. Discuss the various computer generation along with the key characteristics of the computers of each generation.

Q.2. Explain stored program concepts. Discuss the architecture of stored program computers.

Q.3. Explain program development lifecycle with the help of a block diagram.

Q.4. Explain the features of Good Programming Language.

Q.5. What is the difference between Interpreter and Compiler?

Q.6. Find out the value of X in this conversion: $(520)_8=(150)_x$

Q.7 What is the difference between %f and %g format specifiers?

PART-C **[3x10=30]**

(Descriptive/Analytical/Problem Solving/Design question)

Attempt any three questions

Q.1. What do you understand by Central Processing Unit (CPU)? Describe in detail the various units of computer system.

Q.2. Explain the procedure for executing a C program with flowchart.

Q.3. Solve the following:

(a) $(253)_8 + (157)_8$

(b) $(E010)_{16} - (DFFF)_{16}$

(c) $(1010)_8 = (?)_2$

(d) $(FEF)_{16} = (?)_8$

Q.4. Write a program to read a three digit positive integer number n, and generate possible permutation of numbers using the digits in a number.

For example: if n= 123, then the permutations are 123,132,213,231,312,321.

Q.5. Write a program to display number from 1 to 100. Redirect the output of the program to text file.

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