

1E3106

Total No. of Questions : 22

Total No. of Pages : 03

Roll No. : \_\_\_\_\_

**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)

[ersahilkagyan.com](http://ersahilkagyan.com)

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)  $(FFF)_{16} = (?)_8$

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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