1E3106

Roll No.

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B. Tech. I - Sem. (Main / Back) Exam., - 2025

1FY3-06 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 from Part C.

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

[10×2=20]

(Answer should be given up to 25 words only)

All questions are compulsory

Q.1 What are the difference between CPU & ALU?

Q.2 What is assembler?

Q.3 What is system software?

Q.4 What is application software?

Q.5 What are the functions of input unit?

Q.6 What is volatile & non-volatile memory?

Q.7 What is microprocessor?

Q.8 Define number system.

Q.9 What is primary memory?

Q.10 What is secondary memory?

PART – B

[5×4=20]

(Analytical/Problem solving questions)

Attempt any five questions

Q.1 Explain block diagram of computer and also explain the functioning of all its components.

Q.2 Explain the memory architecture of computer in details.

Q.3 Write a program in 'C' language using pointers that receives a floating-point number and sends back the integer and fraction parts.

Q.4 Write r's complements of the following numbers, where r is a radix (base) of these numbers with conversion -

(i) $(1056)_{16}$ to $(?)_8$

(ii) $(11672)_8$ to $(?)_{16}$

(iii) $(2724)_8$ to $(?)_5$

Q.5 Write a program of factorial number in 'C' language. Also write the flow chart and algorithm for this.

Q.6 Explain the concept of file handling. Also write a 'C' language program to copy the data from source file to destination file.

Q.7 Explain the operator precedence in expression evaluation of 'C' language with suitable example.

PART – C

[3×10=30

(Descriptive/Analytical/Problem Solving/Design Questions)

Attempt any three questions

Q.1 Write a program in 'C' language that takes a binary file of long integers and appends a new long integer at the end that is the sum of all integers in the original file.

Q.2 Explain the storage classes in 'C' language in detail.

Q.3 Explain the scope and lifetime of variables in 'C' functions. Explain them with suitable examples.

Q.4 Write a C program to print the following pattern -

A

B B

C C C

D D D D

E E E E E

Also write the flow chart for this.

Q.5 Considering two arrays, A and B, each containing 10 integers. Write a 'C' program that checks if every element of array A is equal to its corresponding element in array B. The program must accept only two pointer values and return a Boolean "true" for equal and "false" for unequal.
