

1E3106

Roll No.

Total No. of Pages: 4

1E3106

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?

[1E3106]

Page 1 of 4

- 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  $(?)_5$

[1E3106]

Page 2 of 4

- 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.

[1E3106]

Page 3 of 4

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.

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