1E3106

Roll No. _____ Total No. of Pages: 3

1E3106

B. Tech. I - Sem. (Main / Back) Exam., - 2023

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 Explain single and multiline comments in C.

Q.2 Describe any four preprocessor directives in C.

Q.3 Describe various symbols used in flow chart.

Q.4 Why keywords cannot be used as identifiers in C?

Q.5 Write the importance of using functions in C.

Q.6 Write pseudo code for checking whether the entered number is even or odd.

Q.7 Differentiate break and continue statements with example.

Q.8 Describe various modes of opening a file in C.

Q.9 How does do-while statement differ from while statement?

Q.10 Explain relational operators with example.

[5×4=20]

PART – B

(Analytical/Problem solving questions)

Attempt any five questions

Q.1 Find r's complement of following numbers where r is radix(base) of these numbers –

(i) $(CAFE27)_{16}$

(ii) $(246700)_{10}$

(iii) $(1101100)_2$

(iv) $(320)_8$

Q.2 Write a C program to swap two numbers without using third variable.

Q.3 Give differences between primary and secondary memory in tabular form.

Q.4 Convert the following -

(i) $(1998)_{10} = (?)_2$

(ii) $(11011)_2 = (?)_{10}$

(iii) $(921)_{10} = (?)_8$

(iv) $(654)_8 = (?)_{10}$

Q.5 Explain Von Neumann architecture in detail.

Q.6 Write a C program to find smallest element in an array.

Q.7 Explain the importance of pointers with respect to dynamic memory allocation.

[3×10=30]

PART – C

(Descriptive/Analytical/Problem Solving/Design Questions)

Attempt any three questions

Q.1 Write a C program to count number of characters in a text file using file handling.

Q.2 Write a C program to print patterns -

```
1  2  3  4  5
6  7  8  9
10 11 12
13 14
15
```

Use for / while loop.

Q.3 How does recursion work? Explain with the help of example. Write advantages and disadvantages of using recursion.

Q.4 Explain call by value and call by reference with help of example of each.

Q.5 Write a C program which store information of 10 students in a structure using loop. For each student, structure maintain roll no., name of student, admission year, category.

After storing the information, also display the information for all students.

1E3106

1E3106

B.Tech. I Sem. (Main) Examination, April/May - 2022
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 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 (As mentioned in form No. 205).

Part - A

(Answers should be given up to 25 words only)

All questions are compulsory. **(10×2=20)**

1. Differentiate between primary & Secondary memory?
2. What are the basic organization of computer? Explain using a block diagram.
3. What do you mean by pseudo code?
4. Justify the term assembly and low level language.
5. Name different type of assignment operators in C programming.
6. How a flow chart is different from algorithm?
7. How may types of access methods are present in computer system?
8. Define & Explain scanf( ) and printf ( ) function.
9. Define pointers & statements in C programming.
10. Define switch case with pseudo code (with example)?

Part - B

(Analytical/Problem solving questions)

(5×4=20)

Attempt any five questions:

1. Draw a flowchart with algorithm & Write a C program to compute simple interest.
2. Write r's complement of the following numbers, where r is a radix(base) of these numbers with conversion-

   i) $(1056)_{10}$ *to* $(?)_8$

   ii) $(11672)_8$ *to* $(?)_{10}$

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

3. Explain Von neumann architecture in detail with block diagram.
4. Explain the concept of file handling in 'C' language write a program to copy the data source file to destination file.
5. What do you mean by the term array also create an array? Find the Kth largest and Kth smallest number in an array.
6. Define algorithm with flow chart. Write algorithm for finding factorial of a number.
7. Write the difference between input device & output device in tabular form.

Part - C

(Descriptive/Analytical/Problem solving/Design Questions)

Attempt any three questions. **(3×10=30)**

1. What are the data types in C programming? Explain with its definition Y pseudo code along with output. Write a C program to find Fibonacci series.
2. What do you mean by parameter passing in 'C' also write the important method of parameter passing example with code along with output.

3. Write a program in 'C' to print half pyramid of alphabets and *:

```
A
B B
C C C
D D D D
E E E E E
```

4. Write a program in C to display the first 10 natural numbers also find the sum of first 10 natural numbers.

5. Write a program in C to read 10 numbers from keyboard and find their sum and average using loops.

2E3207

Roll No. _____ [Total No. of Pages : 2]

2E3207

B.Tech. II Sem. (Main) Examination, July - 2022
2FY3-06 Programming for problem Solving

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

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)

PART - A

(Answer shold be given upto 25 words only)

All questions are compulsory. **(10×2=20)**

1. What are the basic operations performed by a computer system?
2. What are the different kinds of main memory?
3. What is flow chart?
4. Explain the working of control unit.
5. What is pseudo code?
6. Explain the basic input-output statements in c programming.
7. What is compiler?
8. Explain the basic components of computer architecture.
9. Differentiate between assembler and interpreter.
10. What are ASCII Codes?

Attempt any - - - - -

1. Differentiate between High-level, assembly and low-level languages.
2. What are operators in c? Explain its types in detail.
3. Explain the followings with suitable example :
   a) Binary addition
   b) Binary subtraction
4. What are Random, direct and sequential access methods?
5. Write a program in c language to identify greatest number among any three num
6. Explain switch statement with a suitable example.
7. What is file handling? Explain different modes of file handing.

PART - C

(Describptive/Analytical/Problem Solving/Design question)

Attempt any three questions.

1. Differentiate between 'Call by value' and 'call by reference'.
2. What are pointers? Also explain the concept of 'Recursion'.
3. What are data types? Explain the different data types in detail.
4. What are loops? Explain different loops with suitable example.
5. Write short note on (Any 2)
   a) r's and (r-1)'s complement
   b) Array
   c) Functions