GLOBAL INSTITUTE OF TECHNOLOGY
B. Tech. _II
1FY3-06/ 2FY3-06: Programming for Problem Solving

10x1 = 10

1. List Significance of second generation of computers
2. What is translator?
3. Write bottleneck of Von Neumann Computer Architecture.
4. Why do we need programming language?
5. What is radix? Explain r's and r-1's complement with example.
6. Illustrate difference between Algorithm and Pseudocode.
7. Solve $(11011011101)_2$ + $(11011011111)_2$
8. Solve $(110001)_2$ - $(101111)_2$
9. Solve $(2AB)_{16}$ +$(3A4)_{16}$
10. Find r's and r-1's complement of $(562)_7$ Where Radix/base is 7
11. Convert $(456)_{10}$ to $(?)_9$
12. What is an Identifier in 'C'.
13. What is Data type ?
14. What is pointer ?
15. Describe pre-processor directives.
16. Declare a structure with four data members suitable to store details of a product.
17. What is keyword? List any five keywords   .
18. Explain isdigit(),isalpha() functions.
19. Write any two string functions with syntax.
20. Write way to declare constant in a 'C' Program.
21. What are ASCII and BCD Codes.
22. Describe break and Continue statements.   .
23. Differentiate between getch(0, getche() and getchar().
24. Different ways to declare Comments in 'C'.
25. Differentiate between structure and union.
26. Type casting in 'C',

Part B Analytical/Problem solving questions
Attempt all questions (word Limit 75)

5 x 3 =15

1. Explain Von Neumann Computer (Stored program) Architecture with diagram.
2. What do you mean by high-level, assembly, and low-level languages.
3. How do flowcharts aid in representing algorithms visually, and what advantages do they offer in the design and understanding of complex processes? Describe various Symbols used in flowchart.
4. Describe C program Structure.
5. Solve it by 1's and 2's Compliment method:
    a. $(1100001)_2$ – $(1011101)_2$

6. Explain storage classes in 'C'. e.g. auto, extern, Register, static
7. Differentiate between random, direct, and sequential access methods used in storage devices.
8. Compare and contrast the characteristics of various generation of computers.
9. Write a 'C' to print largest among three integers.
10. What is file handling? Explain different modes of file handling.
11. List and explain are various operator in 'C'.

12. Write a program to print given pattern using loop :

```
1
0 1
1 0 1
0 1 0 1
1 0 1 0 1
```

13. What do you mean by recursive function? Write a recursive function to calculate factorial of a number.
12. Explain switch .... case and if (Decision) statements. With examples
14. Differentiate between a text file and binary file.

Part C(Descriptive/Analytical/Problem Solving/Design Question)
Attempt all questions (word Limit 125)

1. What is Memory? Discuss various types of memory? Explain Primary and Secondary memory in detail.
2. Draw a flow chart to input marks of four subjects and print division as given below :

Percentage	Division
>=60	First
>=48 and <=59	Second
>=40 and <=47	Third
<40	Fail

3. Convert the following:

   i. $(467)_8$ to $(?)_{16}$
   ii. $(CB10)_{16}$ to $(?)_{10}$
   iii. $(467)10$ to $(?)_2$
   iv. $(1110001101)_2$ to $(?)_8$

4. Explain 'Call by Value' and 'Call by Reference' with the help of C program.
5. Define Array and write a program to create an array of 10 integers and sort them in ascending order or find secon largest..
6. Write a 'C' program to transpose a matrix.(2D Array)
7. Differentiate between Entry Control and Exit Control Loops with the help of 'C' code.
8. Write a program to read data from keyboard and write it to a file. Read contents/data stored in the file and display it on the screen.