T.E. (Computer) - VI

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QP Code : 5061

(3 Hours) **[Total Marks : 80**

N.B. 1. Q.1 is Compulsory.
2. Solve any THREE from Q.2 to Q.6
3. Assume suitable data whenever necessary, with justification.

Q.1 A) Differentiate between application program and system program. 5
B) State the reason for assembler to be multipass program. 5
C) Explain Functions of loader. 5
D) What is flow graph? State its significance in code generation. 5

Q.2 (A) For following code what will be output generated by Pass-I and Pass-II for two pass assembler. Explain with database. 10

```
ABC     Start   0
        USING   *,15
        L       1,FIVE
        A       1,FOUR
        ST      1,TEMP
FOUR    DC      F'4'
FIVE    DC      F'5'
TEMP    DS      1F
        END
```

(B) Explain operator precedence parser along with example. 10

Q.3 (A) Generate three address code for following code. 10

```
While (a<b)  do
  If  (c<d)   then
        x=y+2
  else
        x=y-2
```

(B) Discus with example quadruple, triple and indirect triple. 10

Q.4 (A) Construct predictive parsing table for following grammar. 10

S→ A
A→ aB | Ad
B→ bBC | f
C→ g

(B) Explain loop optimization with example. 10

Q.5 (A) What are different issues in code Generation, expalin in detail, 10
(B) Explain run time storage organization in details. 10

Q. 6 Write short notes 20
(A) Code motion
(B) LEX and YACC
(C) Software tools
(D) Left recursion and left factoring removal technique