

Total No. of Questions : 6]

SEAT No. :

P50

[Total No. of Pages : 2

**TE/INSEM/APR-55**  
**T.E. (I.T.) (Semester - II)**  
**314451: SYSTEMS PROGRAMMING**  
**(2015 Pattern)**

*Time : 1 Hour]*

*[Max. Marks : 30*

*Instructions to the candidates:*

- 1) *Solve Q.1, or Q.2, Q.3, or Q.4, Q.5 or Q.6.*
- 2) *Figures to the right indicate full marks.*
- 3) *Neat diagrams must be drawn wherever necessary.*
- 4) *Assume suitable data, if necessary.*

- Q1)** a) Define Language processing. Explain different phases of a language processor. [4]
- b) What feature of assembler makes it mandatory to design a two pass assembler? Explain with the help of an example. [6]

OR

- Q2)** a) Enlist different types of errors that are handled by Pass I and Pass II of Two Pass assembler. [4]
- b) Explain with different tables how single pass assembler works for following assembly code [6]

```
START 200
READ N
L1 MOVER AREG , N
ADD AREG ,='1'
BC GT, L1
STOP
N DS 1
END
```

**P.T.O.**

**Q3) a)** Where we need to use STACK in macro processor. List down parameters used in STACK. [4]

b) Prepare object deck for segment STUDENT [6]

```
STUDENT START 100
        ENTRY A
        EXTRN SOLN, DELTA
        BALR 15,0
        USING STUDENT +2,15
        SR 4,4
        L 4, TWO,
        B 5, TWO
        ST 5, SAVE
        BR 14
        DC F '01'
        DC A(A+10)
        SAVE DC 12 C '0'
        A    DC A (DELTA)
        TWO DC F'2'
        END
```

OR

**Q4) a)** Define Nested Macro, Types of nested Macro with example. Explain how MDI, MDLC are used? [7]

b) Write a note on overlays structure of Loaders. [3]

**Q5) a)** Convert the given regular expression in to DFA. [6]  
(0+1)\*. (0+ε)\*

b) What is LEX? Explain LEX specifications. [4]

OR

**Q6) a)** What do you mean by phase structure of compiler? Draw suitable diagram and explain of phases of compiler. [6]

b) What is Lexeme, Token. Explain how lexeme is generated with the help of input buffering and sentinels. [4]

