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SEAT No. :

**PE26**

[6579]-327

[Total No. of Pages : 1

**T.E. (Computer Engg./Computer Science) (Insem)**  
**SYSTEMS PROGRAMMING AND OPERATING SYSTEM**  
**(2019 Pattern) (Semester - I) (310243)**

*Time : 1 Hour]*

*[Max. Marks : 30]*

*Instructions to the candidates:*

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

**Q1) a) Explain Different assembly language statements with examples? [7]**

**b) Explain Pass I and Pass II of two pass Assemblers with suitable examples and flowcharts? [8]**

OR

**Q2) a) Explain different data structures associated with PASS 1 & PASS 2 Assembler with example and structure? [8]**

**b) What is System Programming? Explain Foundation of System Programming? [7]**

**Q3) a) Explain in detail the various phases of a compiler, describes the output for the following Expression after each phase.  $A = b*c + c*d$  [7]**

**b) What are macro processors? Explain Two Pass Macro with a suitable example and algorithm? [8]**

OR

**Q4) a) Explain different argument passing mechanism in Macros with an example? [7]**

**b) Write Short note on: [8]**

- i) Compiler and interpreter
- ii) Macro and Assembler