**[4958]-206**

# T.E. (Information Technology)
# SYSTEM SOFTWARE PROGRAMMING
## (2008 Course) (Semester - II)

*Time : 3 Hours]*                                                    *[Max. Marks :100*

*Instructions to the candidates:*

1) *Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6 from Section I and Q.7 or Q.8, Q.9 or Q.10, Q.11 or Q.12 from Section II.*
2) *Answers to the two sections should be written in separate answer books.*
3) *Neat diagrams must be drawn wherever necessary.*
4) *Figures to the right side indicate full marks.*
5) *Assume suitable data, if necessary.*

## SECTION-I

*Q1)* a) Describe algorithm of Pass I of two Pass assembler with example. **[8]**

b) Describe forward reference and back-patching with suitable example.**[6]**

c) Explain the term System Programming. **[2]**

OR

*Q2)* a) Enlist different data structures required during Pass I and Pass II of two Pass assembler. **[8]**

b) Enlist different types of errors that are handled by Pass I and Pass II of Two Pass assembler. **[8]**

*Q3)* a) Describe Macro call and Macro Expansion in Macro processor with suitable example. **[6]**

b) Explain Advanced Macro facilities with examples. **[8]**

c) Enlist different data structures required during Pass I and Pass II of two pass Macro Processor. **[4]**

OR

*P.T.O.*

**Q4)** a) Explain two pass macro processor with suitable example and show the contents of different tables after processing macro call and macro expansion. **[12]**

b) Explain the actual arguments and dummy arguments with examples. **[6]**

**Q5)** a) Describe Shift Reduce parser with suitable examples. **[8]**

b) Differentiate between compiler and Interpreter. **[2]**

c) Write short note on top down parsing. **[6]**

OR

**Q6)** a) Describe lexical analyzer with example and also show the contents of different tables generated during Lexical Analyzer. **[10]**

b) Explain Ambiguous grammar in Compilers. Explain with example. **[6]**

## SECTION-II

**Q7)** a) Explain Machine dependent code optimization techniques with suitable example. **[8]**

b) What are the issues in code generation? **[8]**

OR

**Q8)** a) Explain the processing of all phases of compiler with respect to the assignment statement given below. Clearly mention the input and output of each phase.

$P = i* r/30.$

Where i is an integer variable while P and r are float type variables. **[12]**

b) Write a short note on activation record. **[4]**

**Q9) a)** Draw the flow chart for Pass I of direct linking loader. **[12]**

 **b)** What is loader? Enlist the basic functions of a loader? **[6]**

<div align="center">OR</div>

**Q10) a)** Explain compile and Go loader scheme. **[6]**

 **b)** Explain **[6]**

   i) Overlay structure,

   ii) Linkage editor.

 **c)** Differentiate between absolute loader and relocating loader. **[6]**

**Q11) a)** Explain the following language processor tools. **[8]**

   i) LEX

   ii) YACC

 **b)** Explain in detail typical editor structure. **[8]**

<div align="center">OR</div>

**Q12) a)** State merits & demerits of Line & Screen editors, with example. **[8]**

 **b)** What is the importance of user interface in system software development? Explain. **[4]**

 **c)** Write the significance of debug monitor? **[4]**

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