

Total No. of Questions : 12]

SEAT No. :

P2285

[4758] - 104

[Total No. of Pages :3

T.E. (I.T.)

SYSTEM SOFTWARE PROGRAMMING

(2008 Course) (Semester - II)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) *Answers Q1 or Q2, Q3 or Q4, Q5 or Q6 from Section I and Q.7 or Q.8, Q.9 or Q.10, Q.11 or Q.12 from section II.*
- 2) *Answer 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)** For the following assembly code generate Literal table, Symbol Table, Pool Table, Intermediate Code, Assume size of instruction is equal to one byte. **[12]**

	START 200
	MOVER AREG, = '5'
	MOVEM AREG, A
LOOP:	MOVER AREG, A
	MOVER CREG, B
	ADD AREG, = '2'
	LTORG
NEXT1:	SUB AREG, = '1'
	ORIGIN LOOP+6
	ADD BREG, A
A	DS 2
B	DC 3
NEXT2:	EQU LOOP
	END

P.T.O.

- b) Explain the following: [6]
- i) Compiler
 - ii) Assembler
 - iii) Interpreter
 - iv) Linker

OR

- Q2)** a) Write an algorithm for Pass - II of two pass Assembler and explain with suitable example. [12]
- b) Write short note on Single Pass Assembler. [6]
- Q3)** a) Describe an algorithm for Pass - I of two pass Macro Processor also show the contents of different tables created during Pass - I for suitable example. [8]
- b) Explain following Macro facilities with example. [8]
- i) Expansion time loops
 - ii) Change of flow during Macro expansion.

OR

- Q4)** a) Write an algorithm for Pass - II of two pass Macro Processor with suitable example. [8]
- b) Write short note on C-Preprocessor. [4]
- c) Describe conditional macro calls with suitable example. [4]
- Q5)** a) List and explain the working of various phases of compiler for the statement $X = Y + Z * 10$ (where X, Y, Z are float type). [8]
- b) Explain Shift Reduce Parser with example also enlist what are the major problems with Shift Reduce Parser. [8]

OR

- Q6)** a) Enlist various tables used and created by Lexical Analyzer? Show the contents of tables with suitable example. [10]
- b) Differentiate between Top down parser and Bottom up Parser. [6]

SECTION - II

- Q7)** a) Explain Machine Independent code optimization technique by taking appropriate example. [12]
b) Explain the importance of intermediate code generation in compiler. [4]

OR

- Q8)** a) For the statement given below, generate intermediate code in the format. [8]
i) Quadruple
ii) Triple
iii) Postfix
iv) Parse Tree
$$A = (-C + D) / (-P * (-Q + R))$$

b) Describe and explain the issues in code generation. [8]

- Q9)** a) Explain BSS loading scheme with the help of an example. Also discuss how four basic functions of loader are performed in BSS loading scheme. [10]
b) Describe ESD and RLD cards with the help of suitable example. [8]

OR

- Q10)** a) Explain the following: [6]
i) Overlay Structure
ii) Linkage editor.
b) What is loader? Enlist basic functions of a loader? [6]
c) Compare: [6]
Dynamic loading Vs Dynamic linking.

- Q11)** a) Describe various types of editors? Explain with the help of the block diagram of Typical Editor structure. [12]
b) Differentiate between Line and Screen editor. [4]

OR

- Q12)** Write a short note on: [16]
a) Debug Monitor.
b) LEX and YACC.
c) Programming Environment.
d) User Interfaces.

