Total No. of Questions : 12]

SEAT No. :

P2285

[Total No. of Pages :3

[4758] - 104
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 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) ***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.