Enrollment No: _____ Exam Seat No:_____

C.U.SHAH UNIVERSITY

Summer Examination-2018

Subject Name : System Programming

Subject Code : 4TE06SYP1 **Branch: B.Tech (IT)**

Semester : 6 **Date : 04/05/2018** **Time : 02:30 To 05:30** **Marks : 70**

Instructions:

(1) Use of Programmable calculator & any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

Q-1 **Attempt the following questions:** **(14)**

a) Which of the following is not a type of assembler?
(a) one pass
(b) two pass
(c) three pass
(d) load and go

b) _____ phase performs type checking task.
(a) Lexical Analysis
(b) Syntax Analysis
(c) Semantic Analysis
(d) None of above

c) Which of the following system software resides in main memory always?
(a) Text editor (b) Assembler (c) Linker (d) Loader

d) Which of the following is not a feature of compiler?
(a) Scans the entire program first and then translate it into machine code
(b) When all the syntax errors are removed execution takes place
(c) slow for debugging
(d) Execution time is more

e) Yacc semantic action is a sequence of _____
(a) Tokens
(b) Expressions
(c) C Statement
(d) Rules

f) Which of the following software tool is parser generator?
(a) Lex
(b) Yacc
(c) Both (a) and (b)
(d) None of these

g) Parsing is also known as_____
(a) Lexical analysis
(b) Syntax analysis

(c) Semantic analysis
(d) Code generation

h) Define: Language Processor
i) Define: Grammar
j) Define: Production
k) Explain Terminal and Non Terminal Symbols
l) Define: Parse tree
m) Define: Deviation & reduction
n) Define: Semantic Gap

Attempt any four questions from Q-2 to Q-8

Q-2 **Attempt all questions** **(14)**

a) What is Program Translation model? What is Program Interpretation Model? Take an example of both models and compare them. **(7)**

b) What do you mean by System Programming? How does System Software differ from Application Software? Give examples of System Software and Application Software to show the difference. **(7)**

Q-3 **Attempt all questions** **(14)**

a) Explain types of grammars. **(7)**

b) Compare single pass assembler and two pass assembler. Explain two pass assembler with example. **(7)**

Q-4 **Attempt all questions** **(14)**

a) What is System Software? Describe different types of System Software. **(7)**

b) What is Compiler? Explain Different phases of compiler with example. **(7)**

Q-5 **Attempt all questions** **(14)**

a) Compare assembly language with machine language with example. **(7)**

b) What is macro? Which different statements constitute a macro? **(4)**

c) Explain nested macro call in briefly. **(3)**

Q-6 **Attempt all questions** **(14)**

a) What is FSA? Define DFA? Draw a DFA that identifies all the floating variables present in a given string? **(7)**

b) What is Programming Environment? Write short notes on – Editors, Debug Monitors and User Interfaces. **(7)**

Q-7 **Attempt all questions** **(14)**

a) What is Regular Expression? What will be the result if we convert given regular expression (a | b)*abb# to DFA? Explain. **(7)**

b) Give and Explain algorithm of first pass linker and second pass of linker. **(7)**

Q-8 **Attempt all questions** **(14)**

a) Describe the steps involved in Program Development Activity. **(7)**

b) Explain & compare various intermediate code forms (representations) for an assembler. **(7)**