P P SAVANI UNIVERSITY

Seventh Semester of B.Tech. Examination
December 2021
SECE4013 System Software

01.12.2021, Wednesday   Time: 09:00 a.m. To 11:30 a.m.   Maximum Marks: 60

Instructions:
1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION – I

Q - 1   Answer the Following: (Any Five)   [05]

(i)   Define Language processor.

(ii)   In two-pass assembler, symbol table is
A) Generated in first pass
B) Generated in second pass
C) Not generated at all
D) Generated and used only in second pass

(iii)   Which of the following is not an example of system software?
A) Word Processors
B) Language Translator
C) Utility Software
D) Communication Software

(iv)   Interoperability, reusability and portability refers to _____ characteristics.

(v)   Define term: Execution Gap.

(vi)   A language processor uses _____ to maintain the information about attributes of symbols used in a source program.

(vii)   Translator is a low-level programming language, which is known as:
A) Compiler
B) Assembler
C) Loader
D) Linker

Q - 2 (a)   Differentiate between Application Software and System Software.   [05]
Q - 2 (b)   Explain the four basic tasks of macro processor.   [05]

OR

Q - 2 (a)   Briefly explain types of Interfaces.
Q - 2 (b)   What is Symbol table? Explain use of symbol table.

Q - 3 (a)   Explain types of grammar.   [05]

Q - 3 (b)   Discuss Life cycle of Source program.   [05]

OR

Q - 3 (a)   Explain lexical analysis of language processor.   [05]

Q - 3 (b)   Consider a grammar G is given as follows: [05]

$S \rightarrow AB \mid aaB$

$A \rightarrow a \mid Aa$

$B \rightarrow b$

Determine whether the grammar G is ambiguous or not. If G is ambiguous, construct an unambiguous grammar equivalent to G.

Q - 4	Attempt any one.	[05]
(i)	Explain the terms macro definition, macro call, macro expansion with syntax and example.	
(ii)	Explain the function of Two-pass assemblers.	

SECTION – II

Q - 1	Answer the Following:	[05]
(i)	A linker is also known as:	

a)Binder
b)Linker Editor
c)All of above
d)None

(ii) A non relocatable program is the one which?

a) Cannot execute in any area of storage other than the one designated
b) Consists of a program and information for its relocation
c)All of above
d)None

(iii) Which of the following groups token together into semantic structures?

a)Syntax Analyzer
b)Semantic Analyzer
c)Code Generation
d)Lexical Analysis

(iv) ___is nothing but observation and control of the flow of program execution.

a)Tracing
b)Condition Expression
c)Break Point
d)Execution Sequecing

(v) A bottom up parser generates _____

a)Left Most Derivation
b)Right Most Derivation
c) Right Most Derivation in Reverse
d)All

Q - 2 (a)	Explain Compile and Go Loader.	
Q - 2 (b)	Explain Lexical Analysis with example.	[05]
Q - 3 (a)	Explain Code Optimization Technique.	[05]
Q - 3 (b)	Compare Performance of Compiler and Interpreter.	[05]
Q - 4	Attempt any one.	[05]
		[05]
(i)	Explain ambiguous grammar with example.	
(ii)	Explain backtracking parsing technique.	

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