

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER-III • EXAMINATION – SUMMER • 2014

Subject Code: 630005**Date: 05-06-2014****Subject Name: System Software****Time: 02:30 pm - 05:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 (a) Explain the following parameter passing mechanism. Compare and contrast in terms of execution efficiency and power to produce side effects. **07**

1. Call by value – result
2. Call by reference
3. Call by name

(b)

1. Define language processing. Explain language processor development tools. **04**

2. consider the grammar G **03**

<Sentence> ::= <Noun phrase><Verb phrase>

<Noun phrase> ::= <Article><Noun>

<Verb phrase> ::= <Verb><Noun phrase>

<Article> ::= a | an | the

<Noun> ::= monkey | banana

<Verb> ::= ate

Perform derivation of the string “ the monkey ate a banana”

Q.2 (a) Fill in the blanks **07**

1. _____ is a language processor which bridge an execution gap but is not a language translator.
2. _____ is the process of recognizing the lexical components in a source string.
3. A _____ is an association between the memory address attribute of a data item and the address of a memory area.
4. _____ aims at improving the execution efficiency of a program.
5. _____ is used to reduce the main memory requirement of a program.
6. The linker process a set of object modules to produce a ready to execute program form which is called _____.
7. The device driver is the glue between an _____ and its I/O devices.

(b)

1. Write short notes about loader. **04**
2. Explain extended stack model. **03**

OR**(b)**

1. Write short notes about self-relocating program. **04**
2. Write short notes about programming environment. **03**

Q.3	(a)	Write the tasks performed by the analysis and synthesis phase of assembler. Explain data structure used for assembler.	07
	(b)	1. Explain the following assembler directives. i) ORIGIN ii) EQU	04
		2. Write notes on operator precedence parser.	03
		OR	
Q.3	(a)	Explain the algorithm for first pass of assembler.	07
	(b)	1. Explain three kinds of statements in assembly program.	04
		2. Write notes on recursive decent parser.	03
Q.4	(a)	What is macro? Explain different types of parameter used in macro with example.	07
	(b)	1. Explain nested macro calls with example.	04
		2. Explain translated origin, linked origin and load origin with example.	03
		OR	
Q.4	(a)	What is macro expansion? Explain expansion time variable and expansion time statements with syntax and example.	07
Q.4	(b)	1. List out different tables used in micro preprocessor with fields.	04
		2. Explain four components of object module of a program.	03
Q.5	(a)	What is the use of device driver. What is the significance of start(), close(), halt(), read() and ioctl() entry points in device driver.	07
	(b)	Explain the components and use of interpreter. What is pure and impure interpreter.	07
		OR	
Q.5	(a)	Write steps for installing device driver in a UNIX system.	07
	(b)	Explain different phases of the compiler in detail.	07
