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No.	

## T.E. (E&TC) (Semester – II) Examination, 2014 SYSTEM PROGRAMMING AND OPERATING SYSTEM (2008 Pattern) (New)

Time: 3 Hours Max. Marks: 100

Instructions: 1) Solve Q. 1 or Q. 2, Q. 3 or Q. 4, Q. 5 or Q. 6 from Section I, Q. 7 or Q. 8, Q. 9 or Q. 10, Q. 11 or Q. 12 from Section II.

- 2) Answers to the two Sections should be written in separate books.
- 3) Figures to the right indicates full marks.
- 4) Electronic calculator is allowed.
- 5) Assume suitable data, if necessary.

## SECTION - I

1.	a)	Describe the language processor in detail with various language processing activities.	8
	b)	Design and explain assembler pass-II of two pass assembler in detail.	8
	c)	What is a LTORG Statement ? OR	2
2.	a)	Explain different development tools used to develop language processor.	6
	b)	Explain different data structures used for language processing.	8
	c)	Explain ORIGIN and EQU statement.	4
3.	a)	What are different phases of complier and explain each with example.	8
	b)	Explain the terms:  1) Macro definition  2) Macro calls  3) Macro expansion  4) Nested macro calls  OR	8
4.	a)	Explain design of two pass MACRO processor in detail.	8
	b)	Explain parameter passing mechanisms:  1) Call by value 2) Call by reference 3) Call by result 4) Call by name.	8

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5.	a)	) What is loader? List basic functions and features of a loader.	
	b)	Explain different software tools used for program development.  OR	8
6.	a)	List and explain the different loader scheme in brief.	8
	b)	What is linker? Explain MS-DOS linker in detail.	8
		SECTION - II	
7.	a)	What is an operating system? List the various types of the O.S. with their basic functions.	8
	b)	What are deadlocks? Explain deadlock prevention and avoidance methods.  OR	8
8.	a)	Explain scheduling criteria? Explain different types of scheduling algorithms in brief.	8
	b)	Explain inter process communication with their problems and solution.	8
9.	a)	What is virtual memory? Explain different techniques used for virtual memory.	8
	b)	Given the memory partitions of size 100k, 500k, 200k, 300k and 600k (in order). How would each of the first fit, best fit, worst fit algorithms place the process of 212k, 417k, 112k and 426k (in order)? Which algorithms makes the most efficient use of memory?	8
	c)	Note on : second chance page replacement algorithm.  OR www.sppuonline.com	2
10.	a)		8
	b)	Consider the page -reference string 2, 3, 2, 1 5, 2, 4, 5, 3, 2, 5, 2	
		Calculate page-fault for : i) FIFO ii) LRU iii) Optimal.	
		If number of page frames : 3	8
	c)	Note on : Demand paging.	2
11.	a)	Explain the different Disk-arm scheduling algorithms.	8
	b)	Short note on:  1) I/O software layers  OR  2) Power management	8
12.	1) 2) 3)	ort note on : File structure Directory structure Graphical user interface File operations.	16

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