CBCS Scheme

Second Semester MCA Degree Examination, Dec.2017/Jan. 2018
System Software

Time: 3 hrs.   Max. Marks: 80

**Note: Answer any FIVE full questions, choosing
ONE full question from each module.**

Module-1

1   a.   Explain the architecture of SIC program.   (08 Marks)
    b.   Write any five addressing modes of SIC/XE with their flag bit values   (05 Marks)
    c.   Write an assembly program in SIC/XE to perform 'ALPHA = 9 − ALPHA * 10' using only
         register addressing instructions considering the priority of operators.   (03 Marks)

OR

2   a.   Write the algorithm of pass-1 of two-pass assembler.   (08 Marks)
    b.   Generate the object code for following program using the OPCODES as given :
         (CLEAR = B4, LDS = 6C, ADD = 18, J = 3C).

	START	0	
FIRST	CLEAR	X	
	+LDS	#4096	
	ADD	@TAB1	
ALPHA	RESB	1	
TAB1	WORD	256	
	END		

                                                                                       (08 Marks)

Module-2

3   a.   Describe the following assembler directive with proper example :
         i) LTORG ii) ORG   (08 Marks)
    b.   Why extended addressing is not reloadable? Explain how to resolve the relocation problem
         of extended format with an example and block diagram.   (08 Marks)

OR

4   a.   Explain the working of load-and-go assembler with proper example.   (08 Marks)
    b.   Explain how the program with program blocks gets loaded into memory with block diagram.
                                                                                       (04 Marks)
    c.   What do you mean by delayed branches in SPARC assembler? Explain with example.
                                                                                       (04 Marks)

Module-3

5   a.   Write the algorithm of absolute loader.   (04 Marks)
    b.   Give the format of relocation bit for program relocation with relevant example.   (04 Marks)
    c.   Explain how the program linking is performed by the loader with a block diagram.   (08 Marks)

OR

6 a. Explain linking loader and linkage editor. Compare linking loader with linage editor.
   (08 Marks)
   b. Write a not eon MSDOS linker.   **(08 Marks)**

Module-4

7 a. Explain the different data structures used by macro processor with block diagram. **(08 Marks)**
   b. Explain with example concatenation of macro parameters.   **(08 Marks)**

OR

8 a. Explain how the ARGTAB is affected in recursive macro expansion with proper example.
   (08 Marks)
   b. Describe the salient features of ANSI C macro processor.   **(08 Marks)**

Module-5

9 a. Explain recursive descent parsing. Write recursive descent parse for READ statement.
   (08 Marks)
   b. Briefly discuss different machine dependent code optimization techniques.   **(08 Marks)**

OR

10 a. Using the given finite automation, check if the following string are recognized or not
    i) abca ii) abccccabc iii) abaab iv) ababcab v) ababbab vi) abcbc vii) abcabc viii) abba.
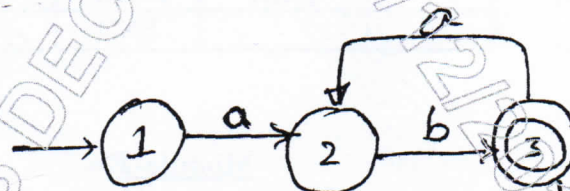   **(08 Marks)**

Fig.Q10(a)

    b. Write note on :
       i) p-code complier
       ii) YACC complier.   **(08 Marks)**

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