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COLLEGE OF ENGINEERING, PUNE

(An Autonomous Institute of Govt. of Maharashtra)

ESE- November, 2013

(CT – 09004) SYSTEM PROGRAMMING

Class: - T.Y. B.Tech (Computer Engineering)

Year: - 2013-14 **Semester: - V**

Duration: - 3hr **Max. Marks: - 60**

Instructions:

1. ***All the Questions are compulsory.***
2. ***Assume suitable data whenever necessary.***
3. ***Draw neat figures wherever required***
4. ***Figures to right indicate full marks***

Q.1 Attempt any TEN of the following. [10X2=20]

A] What is system software? Differentiate it from application software.

B] What are the symbols defining statements generally used in assemblers?

C] What is program relocation? Explain the problem associated with it and solutions?

D] Differentiate the assembler directives RESW and RESB.

E] How Forward references are handled in one pass assembler?

F] Pass I of the assembler must also generate the intermediate code for the processed statements. Justify your answer.

G] How the nested macro calls are executed? Mention the tasks involved in macro expansion.

H] What is the need of ESTAB? What is the use of the variable PROGADDR?

I] What are the advantages and disadvantages of general purpose macroprocessors?

J] List four software tools that assist a programmer during program testing and debugging.

K] What are the four important tasks of text editor?

Q.2 A] Describe with example basic macro processor functions and explain the design of a macro preprocessor. [5]

OR

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B] Explain Macro Definition and Expansion. How are Labels used in Macros? [5]

C] Define Assembler and give the assembler directives? List of machine dependent and independent assembler futures. Explain any one of them? [5]

Q.3 A] What is dynamic loading? List the advantages of overlay structure. Distinguish between DFA and NFA? [5]

B] Explain analysis and synthesis phase of a compiler. [5]

Q.4 A] Let us consider a two pass asembler and assume that each instruction is one word. Given an assembly program and code for Mnemonics. [5]

	START 101	Mnemonics	CODE
	READ A	STOP	00
	READ B	MULT	03
	MOVER BREG,A	MOVER	04
	MULT BREG,B	MOVEM	05
	MOVEM BREG,D	READ	09
	STOP	DS	02
A	DS 1	START	01
B	DS 1	END	02
D	DS 1	Ordinal number of BREG is 2	
	END		

(i) Show content of symbol table at the end of pass-one of an assembler.

(ii) Write intermediate code representation of the assembly program. Use variant-II of intermediate code representation.

B] What are the basic functions of loaders? Define and explain absolute loader. [5]

OR

C] Explain the software tools for program developments? [5]

Q.5 A] Write a short note on following(Any 2) [10]

a] MS-DOS Linker

b] LEX and YACC

c] Line and Stream editors
