

**B.Tech. SEM -IV (Computer) 2014 Course (CBCS) : WINTER -
2017**

SUBJECT : SYSTEMS PROGRAMMING

Day : **Wednesday**
Date : **22/11/2017**

Time : **02.30 PM TO 05.30 PM**
Max. Marks : 60

W-2017-2075

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labeled diagrams **WHEREVER** necessary.
- 4) Assume suitable data if necessary.

Q.1 Define Assembler. Explain the use of literal table, location counter, FRT and TII in design of an assembler. [10]

OR

Explain in detail the pass structure of a language processor. Also discuss the issues that pose challenge for the language processing activities. [10]

Q.2 a) Define Macro-processor. Justify that the process of macro expansion should be a preprocessing activity. [05]

b) List the advantages and disadvantages of incorporating macro-processor into pass1 of an assembler. [05]

OR

Explain the structure and purpose of databases used in design of a macroprocessor. [10]

Q.3 Distinguish between : [10]
i) Absolute loader and Relocating loader
ii) Static Linking and Dynamic Linking

OR

Explain in detail complete design of a Direct Linking loader. [10]

Q.4 Compare the following: [10]
i) Top down parsing and Bottom up parsing
ii) Machine dependent code optimization and machine independent code optimization

OR

Describe the concept of lexical analysis. Illustrate it with example. Explain various databases used in lexical phase of a compiler. [10]

Q.5 Define operating system. Explain in detail structure of UNIX operating system. List features of UNIX operating system. [10]

OR

Define shell. Explain different types of shell. Explain shell programming features. [10]

Q.6 Compare the following: [10]
i) Device drivers for UNIX and device drivers for windows
ii) Character device drivers and Block device drivers

OR

Explain in detail basic device driver operation with a line printer as example. [10]

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