B.Tech 4th Semester Exam., 2015

SYSTEMS PROGRAMMING

Time : 3 hours *Full Marks* : 70

Instructions :

(i) All questions carry equal marks.

(ii) There are ***NINE*** *questions in this paper.*

(iii) Attempt ***FIVE*** *questions in all.*

(iv) Question No. ***1*** *is compulsory.*

1. Answer the following questions (any *seven*) :

(a) Differentiate between assembler and interpreter.

(b) Define systems programming.

(c) Give the general model for translation process.

(d) How are non-relocatable programs different from relocatable programs?

(e) Differentiate between loader and linker.

(f) Define macro.

(g) Define editors and debuggers.

(h) What is bootstrap loader?

(i) Write the fundamental steps in program development.

(j) Define triples and quadruples.

2. (a) What is assembly language? What kinds of statements are present in an assembly language?

(b) Discuss the advantages of assembly language.

3. (a) What are the basic loading tasks?

(b) Explain loader procedure and loader features.

4. (a) Briefly describe machine-dependent and machine-independent compilers.

(b) Write short notes on YACC and debug monitors.

5. (a) What are linkage editors? Give the characteristics.

(b) Describe the term 'dynamic linking' with proper diagram.

6. *(a)* What are the disadvantages of one-pass assembler?

(b) Give the comparisons of macros and procedures.

7. *(a)* What is a boot loader? Give the basic concept of boot loader.

(b) Describe one-pass linking loader in detail.

8. *(a)* Give the types of errors.

(b) Write down the hardware supports of debugger.

9. *(a)* Give the output of each phase of compilation for the input "a=(b*c)*(b*c)*2".

(b) What is left recursive grammar? How to eliminate left recursion? Explain with an example.

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