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(Pages 2)

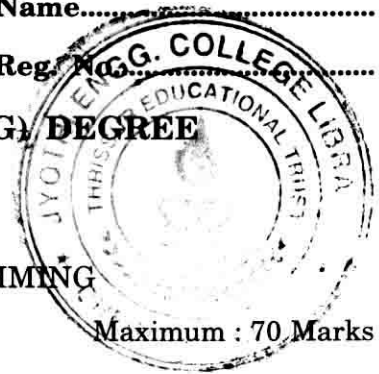# FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, APRIL 2014

(2009 Scheme)

CS 09 405/PTCS 09 404 – SYSTEMS PROGRAMMING

Time : Three Hours

Maximum : 70 Marks

Part A

Short answer questions (one / two sentences).

1. What are the Advantages of using Context-Free grammars ?

2. Name the various databases used in design of compiler ?

3. What are advantages of direct linking loader ?

4. What are different types of cards produced by assembler ?

5. What is the use of macro instructions ?

6. Define Microkernel.

(5 × 2 = 10 marks)

Part B

*Answer any **four** questions.*
Analytical / Problem solving questions.

7. Convert given regular expression to DFA. The expression is (a | b)*abb#.

8. Explain the steps followed to design an assembler.

9. Elimination of sub expression is performed in which phase ? Explain briefly.

10. What is the modularity within the functions in passes 1 and 2 of the assembler ?

11. Discuss the difference between multiprocessing and multiprogramming.

(4 × 5 = 20 marks)

Part C

*Answer **all** questions.*
Descriptive / Analytical / Problem solving questions.

12. (a) Considering a simple assembly language program, explain the process of assembler in general.

Or

(b) Explain the machine dependent and machine independent of system software with examples.

Turn over

13. (a) Discuss about absolute linking loader.

Or

(b) Explain the Macros and the formal Systems.

14. (a) Explain monolithic kernel operating system.

Or

(b) With Gantt-chart illustration, compare the CPU scheduling in non-preemptive and preemptive tasks.

15. (a) Explain the events performed by the kernel after a process is being swapped out from the main memory.

Or

(b) With a neat diagram, explain the Unix kernel support for files.

(4 × 10 = 40 marks)