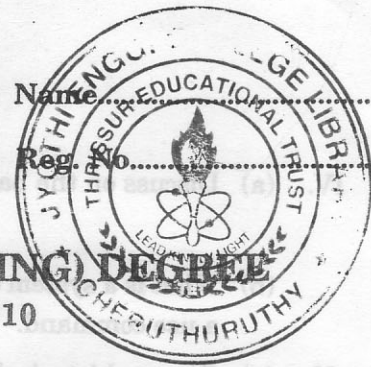


C 15227

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**FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, DECEMBER 2010**

CS/IT 04 403 – SYSTEMS PROGRAMMING

(2004 Admissions)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

- I. (a) Let ALPHA RESW 1
BETA RESW 1
GAMMA RESW 1

Write a sequence of instructions for SIC to set ALPHA equal to 4 times BETA deducted by 9 and GAMMA equal to product of (ALPHA + BETA) and (ALPHA – BETA).

- (b) List the steps involved in translating a source program to object code by a simple SIC assembler.
- (c) Write notes on bootstrap loaders.
- (d) What criteria are used to decide the use of a macro or a subroutine to accomplish a given logical function.
- (e) Differentiate between multiprogramming and timesharing OS.
- (f) Write the major benefits of virtual machines.
- (g) What are the services provided by Kernel of Unix System transparently.
- (h) What is meant by context of a process? How context switching is handled by Kernel?

(8 × 5 = 40 marks)

Part B

- II. (a) Explain the architectural features of PentiumPro in detail.

Or

- (b) Discuss on the machine independent assembler features and how they are handled in detail.

- III. (a) Describe elaborately on the characteristic features of MS-DOS tinker in detail.

Or

- (b) Explain how conditional macro expansion is carried out in the macro assembly process.

Turn over

IV. (a) Discuss on the basic principle and hardware features required for real-time systems.

Or

(b) What is a system call? With example write the sequence of system calls to be made to execute a use command.

V. (a) Give an historical perspective of growth of UNIX Operating System.

Or

(b) Explain in detail the file and process handling of UNIX Operating System.

(4 x 15 = 60 marks)

Part A

Answer all questions.

I. (a) Let ALPHA RESW 1
BETA RESW 1
GAMMA RESW 1

Write a sequence of instructions for SIC to set ALPHA equal to 4 times BETA deducted by 9 and GAMMA equal to product of (ALPHA + BETA) and (ALPHA - BETA).
(b) List the steps involved in translating a source program to object code by a simple SIC assembler.
(c) Write notes on bootstrap loaders.
(d) What criteria are used to decide the use of a macro or a subroutine to accomplish a given logical function.
(e) Differentiate between multiprogramming and time-sharing OS.
(f) Write the major benefits of virtual machines.
(g) What are the services provided by Kernel of Unix System transparently?
(h) What is meant by context of a process? How context switching is handled by Kernel?
(8 x 5 = 40 marks)

Part B

II. (a) Explain the architectural features of Picturino in detail.

Or

(b) Discuss on the machine independent assembler features and how they are handled in detail.

III. (a) Describe elaborately on the characteristic features of MS-DOS linker in detail.

Or

(b) Explain how conditional macro expansion is carried out in the macro assembly process.