

C 58193

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Name .....

Reg. No. ....

**FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE  
EXAMINATION, JUNE 2009**

CS/IT/04 403—SYSTEMS PROGRAMMING

(2004 Admissions)

Time : Three Hours

Maximum : 100 Marks

*Answer all questions.*

- I. 1 Explain the data formats of ULTRA SPARC.  
2 Explain program relocation with an example.  
3 Discuss how an object program is processed using a linking loader.  
4 List the advantages and disadvantages of combining macroprocessing within language translators.  
5 Explain privileged mode of CPU operation.  
6 Explain the storage hierarchy.  
7 Write notes on interrupts and exceptions for a UNIX systems.  
8 Draw the block diagram of the system Kernel.

(8 × 5 = 40 marks)

- II. (a) Explain all the addressing modes supported by SIC/XE. Write an assembly program for SIC/XE to set array elements to  $O_1$ , if the value of the array element is less than 16 or else set to 1; assuming an array of 100 words.

*Or*

- (b) Explain the various data structures used by a simple assembler.

- III. (a) Describe the significant features of the Microsoft MS-DOS linker for Pentium and other X86 systems.

*Or*

- (b) Describe the features of machine independent Macro processor.

- IV. (a) Write notes on parallel and distributed systems.

*Or*

- (b) List down the services of an operating system and explain them briefly.

**Turn over**



V. (a) Explain the architecture of a UNIX system.

Or

(b) Give an overview of the file subsystem in UNIX.

(4 × 15 = 60 marks)

Maximum: 100 Marks

Time: Three Hours

Answer all questions

1. Explain the data formats of UNIX shell.
  2. Explain program relocation with an example.
  3. Discuss how an object program is processed using a linking loader.
  4. List the advantages and disadvantages of combining micro-processors within linkers.
  5. Explain provided mode of CPU operation.
  6. Explain the storage hierarchy.
  7. Write notes on interrupts and exceptions for a UNIX system.
  8. Draw the block diagram of the system kernel.
- 4 × 15 = 60 marks
9. (a) Explain all the addressing modes supported by UNIX. Write an assembly program for 8086 to set array elements to 1. If the value of the array element whose index is given as 10, assuming an array of 100 words.
  - (b) Explain the various data structures used by a simple assembler.
10. (a) Describe the significant features of the Microsoft MS-DOS kernel for Pentium and other 32-bit systems.
  - (b) Describe the features of discharge independent Macro processor.
11. (a) Write notes on parallel and distributed systems.
  - (b) List down the services of an operating system and explain them briefly.

Turn over