D 42099 (Pages 2) Name.....

Reg. No.....

FIFTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, DECEMBER 2007

Computer Science Engineering

CS/IT 2K 505—OPERATING SYSTEMS

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *questions.*

I. (a) Explain the two modes by which user program can request a Kernel's services.

(b) Write the steps involved in performing an input operation using polling.

(c) Describe the various fields of process descriptors.

(d) What is deadlock ? Discuss the way to prevent the occurrence of deadlock.

(e) What are the basic requirements that drives the design of primary memory ? What are the functions of memory manager ?

(f) Explain the process of segmentation, used for implementing virtual memory.

(g) What are the various informations maintained by file system with respect to files as file descriptor ?

(h) Explain how access matrix can be implemented using memory locks and keys.

(8 × 5 = 40 marks)

Part B

II. (a) Discuss in detail the factors significantly influencing the evolution and design of operating system.

Or

(b) Explain any two basic device management approaches with their advantages and disadvantages.

III. (a) What is scheduling ? Explain the scheduling mechanism adopted by the process manager to handle processes with illustration.

Or

(b) Write the Banker`s algorithm and explain with an example how it can be used for deadlock avoidance.

Turn over

IV. (a) Explain any two memory management strategies and the issues associated with them in detail.

Or

(b) What is segmentation ? Explain how segment memory management is implemented in detail.

V. (a) Explain any two methods by which the physical storage is allocated by file manager.

Or

(b) Enumerate the salient features of UNIX operations system in detail.

(4 × 15 = 60 marks)