G 2135 (Pages : 2) Reg. No.....3.....

Name.....

B.TECH. DEGREE EXAMINATION, APRIL 2010

Fifth Semester

Branch—Computer Science and Engineering

OPERATING SYSTEMS (R)

(Supplementary—Prior to 2007 Admissions)

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*

Part A

1. Explain how OS uses multiprogramming to implement time-sharing.
2. Write notes on real time operating system.
3. What are the various operations performed on a process ?
4. What is a process table ? Explain the various fields present in it.
5. What is a rousable graph model ? How is it different from the consumable graph model ?
6. Explain the various methods of recovering from dead lock.
7. What is the cause of thrashing ? How does the system detect thrashing ? Once it detects thrashing, what can the system do to eliminate this problem.
8. Differentiate internal and external fragmentation.
9. Explain the different ways of representing directories.
10. With an example, explain the working of look algorithm.

(10 × 4 = 40 marks)

Part B

11. (a) Draw and explain the architecture of UNIX system.

Or

(b) With a neat sketch, discuss the structure of windows 2000 OS.

12. (a) Describe the difference among short-term, medium-term and long-term scheduling with suitable examples.

Or

(b) Explain how process creation, deletion and scheduling is done under a UNIX environment.

Turn over

13. (a) (i) What are the major drawbacks of busy wait implementation of semaphore primitives ? Explain a technique to alleviate these drawbacks.

(8 marks)

(ii) What are the two ways to achieve interprocess communication in multiprocessor environment ?

(4 marks)

Or

(b) Consider the bourded-buffer producer/consumer problem. Give the complete statement of the problem. Derive a synchronization protocol using semaphores.

14. (a) Write short notes on :

(i) Compaction ;

(ii) Protection and sharing in segmentation.

Or

(b) (i) With a neat diagram explain paging. (8 marks)

(ii) When do page fault occur ? Describe the actions taken by the OS when a page fault occurs ? (4 marks)

15. (a) Explain the different types of file allocation methods giving their merits and demerits.

Or

(b) Describe the physical characteristics of various storage devices.

[5 × 12 = 60 marks]