(6 pages) **Reg. No :** .....

Code No. : 30837 **Sub. Code : R 3 CS 61/ B 3 CS 61**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2014.

Sixth Semester

Computer Science – Main

Paper IX – OPERATING SYSTEM

(For those who joined in July 2008 to 2011)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. ———— processor schedules and allocates work to slave processor
   (a) Master processor (b) Multi processor
   (c) Parallel processor (d) None

2. ———— act as a interface.
   (a) Procedures (b) System calls
   (c) Protocols (d) Software

3. The degree of multiprogramming is controlled by
   (a) Long term scheduler
   (b) Medium term scheduler
   (c) Short term scheduler
   (d) None

4. The other name for short term scheduler is
   (a) Process scheduler
   (b) CPU scheduler
   (c) Job scheduler
   (d) None

5. Semaphore with unrestricted domain
   (a) Counting semaphore
   (b) Binary semaphore
   (c) Starvation
   (d) None

6. Bankers algorithm is used for ————
   (a) Deadlock avoidance
   (b) Deadlock prevention
   (c) Deadlock detection
   (d) All the above

7. The advantage of dynamic loading is

(a) Common code

(b) Unused routine is never loaded

(c) Size of memory

(d) Load time

8. The advantage of virtual memory is

(a) The processes completely in memory

(b) The processes larger than physical memory

(c) Memory storage limitation

(d) All the above

9. A cyclic graph directory structure allows

(a) Multiprogramming

(b) Multi tasking

(c) Sharing files

(d) All the above

10. The page cache uses ———— technique.

(a) Demand paging

(b) Virtual memory

(c) Priority paging

(d) None

PART B — (5 × 5 = 25 marks)

Answer ALL the questions, choosing either (a) or (b), each answer should not exceed 250 words.

11. (a) Describe the essential properties of the batch systems.

Or

(b) What are the system calls used in file management? Explain its functions.

12. (a) Discuss how parent process terminate the execution of children.

Or

(b) What are the parameters used in multilevel feedback queue scheduling? Explain it.

13. (a) Discuss binary semaphore in detail.

Or

(b) Discuss how resource preemption recover the system from deadlocks.

14. (a) Discuss the problem of fragmentation.

Or

(b) Explain second chance page replacement algorithm.

15. (a) Discuss the layered design of a file system in detail.

Or

(b) Discuss the disk layout of Ms-DOS.

PART C — (5 × 8 = 40 marks)

Answer ALL the questions, choosing either (a) or (b), each answer should not exceed 600 words.

16. (a) Explain real time system and its advantages.

Or

(b) Discuss the following

(i) Process management

(ii) File management

17. (a) Discuss how message passing system is implemented through send and receive operations.

Or

(b) Explain the following

(i) SJF scheduling

(ii) RR scheduling

18. (a) Discuss concurrent atomic transactions in detail.

Or

(b) Explain how to prevent the occurrence of deadlock.

19. (a) Explain hierarchical and inverted page tables in detail.

Or

(b) Explain how to handle page faults.

20. (a) Explain direct access file accessing method in detail.

Or

(b) Explain recovery procedures in detail.

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