

(6 pages)

Reg. No. : .....

Code No. : 9913

Sub. Code : HCAM 24

M.C.A. (CBCS) DEGREE EXAMINATION,  
APRIL 2015.

Second Semester

Computer Applications

OPERATING SYSTEMS

(For those who joined in July 2012 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. \_\_\_\_\_ systems are used to group the similar jobs for speed up the process.  
(a) Batch (b) Multitask  
(c) Time sharing (d) None
2. Which system provides high availability?  
(a) Client server (b) Clustered  
(c) Real time (d) Batch

3. Semaphores are used to solve the problem of \_\_\_\_\_.  
(a) race condition  
(b) process synchronization  
(c) mutual exclusion  
(d) none of the above
4. A system has 3 processes sharing 4 resources. If each process needs a maximum of 2 units then \_\_\_\_\_.  
(a) deadlock can never occur  
(b) deadlock may occur  
(c) deadlock has to occur  
(d) none of the above
5. \_\_\_\_\_ is a technique of temporarily removing inactive programs from the memory of computer system.  
(a) swapping (b) spooling  
(c) semaphore (d) scheduler
6. The problem of Thrashing is affected significantly by \_\_\_\_\_.  
(a) programme structure  
(b) programme size  
(c) primary storage size  
(d) all the above

Page 2

Code No. : 9913



7. In which of the following page replacement policies Belady's anomaly occurs?

- (a) FIFO (b) LRU
- (c) LFU (d) NRU

8. Page fault frequency in an operating system is reduced when the \_\_\_\_\_.

- (a) processes tend to the I/O bound
- (b) size of pages is reduced
- (c) processes tend to be CPU bound
- (d) locality of reference is applicable to the process

9. The blocking factor of a file is \_\_\_\_\_.

- (a) number of blocks accessible to a file
- (b) number of blocks allocated to a file
- (c) number of logical records in one physical record
- (d) none

10. The main reason to encrypt file is \_\_\_\_\_.

- (a) reduce its size
- (b) secure it
- (c) for backup
- (d) include it in startup sequence

Page 3

Code No. : 9913

**PART B — (5 × 5 = 25 marks)**

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Describe in detail about Real Time Operating System and its types.

Or

(b) Differentiate Batch systems and multiprogramming systems.

12. (a) Differentiate between process and program.

Or

(b) Explain the conditions to lead Deadlock.

13. (a) What are the common strategies to select a free hole from a set of available holes? Explain.

Or

(b) Explain about the techniques for structuring the page table.

14. (a) Differentiate between Preemptive and Non-Preemptive Scheduling.

Or

(b) List the Criteria's available in scheduling.

Page 4

Code No. : 9913

[P.T.O.]



15. (a) Differentiate Scan Vs C-Scan and Look Vs C-Look.

Or

- (b) Discuss in detail about i-node.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss in detail about Operating System views.

Or

- (b) What are the system components of OS? Explain.

17. (a) Discuss the implementation of Reader's Writer's problem using Semaphore.

Or

- (b) Explain in detail about Deadlock prevention.

18. (a) Explain the basic concepts of Segmentation.

Or

- (b) Discuss about various page replacement strategies.

Page 5

Code No. : 9913

19. (a) Explain in detail about various I/O data transfer schemes.

Or

- (b) Describe in detail about the logical structure of I/O function.

20. (a) Discuss in detail about various Directory structures.

Or

- (b) Explain the various file allocation methods.

Page 6

Code No. : 9913

