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**Reg. No.:**.....

**Code No. : 30203 E      Sub. Code : GMCA 61**

B.C.A. (CBCS) DEGREE EXAMINATION,  
APRIL 2020.

Sixth Semester

Computer Applications — Main

OPERATING SYSTEM

(For those who joined in July 2012 - 2015)

Time : Three hours

Maximum : 75 marks

PART A — ( $10 \times 1 = 10$  marks)

Answer ALL questions.

Choose the correct answer

1. Multi-processor system gives a
  - (a) small system
  - (b) tightly coupled system
  - (c) loosely coupled system
  - (d) both (a) and (b)

2. Time sharing systems of the computer system have
  - (a) Clusters
  - (b) Nodes
  - (c) File system
  - (d) Both (a) and (b)
3. A process stack does not contain
  - (a) Function parameters
  - (b) Local variables
  - (c) Return addresses
  - (d) PID of child process
4. The address of the next instruction to be executed by the current process is provided by the
  - (a) CPU registers
  - (b) Program counter
  - (c) Process stack
  - (d) Pipe
5. To avoid the race condition, the number of processes that may be simultaneously inside their critical section is
  - (a) 8
  - (b) 1
  - (c) 16
  - (d) 0
6. The section of code which accesses shared variables is called as \_\_\_\_\_.
  - (a) Critical section
  - (b) Block v
  - (c) Procedure
  - (d) Semaphore

7. \_\_\_\_\_ page replacement algorithm suffers from Belady's anomaly.
- (a) LRU
  - (b) MRU
  - (c) FIFO
  - (d) LIFO
8. Virtual Memory is commonly implemented by \_\_\_\_\_.
- (a) Segmentation
  - (b) Swapping
  - (c) Demand Paging
  - (d) None of the above
9. The sum of the seek time, and the rotational delay is called the \_\_\_\_\_.
- (a) reached time
  - (b) access time
  - (c) arrived time
  - (d) common time
10. \_\_\_\_\_ begins at the root and follows a path down to the specified file.
- (a) Relative path name
  - (b) Absolute path name
  - (c) Standalone name
  - (d) All of the above

PART B — ( $5 \times 5 = 25$  marks)

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

Each answer should not exceed 250 words.

11. (a) Discuss about the real time system.

Or

- (b) Explain various operating system services..

12. (a) Briefly Explain about criteria for process scheduling

Or

- (b) Explain the scheduling algorithm that mainly used for time sharing system.

13. (a) What are semaphores? What is its role in mutual exclusion?

Or

- (b) How can an OS prevent a deadlock situation? Explain.

14. (a) Write short notes on segmentation.

Or

- (b) Explain the different address translation mechanism in paging.

15. (a) Explain about disk free space management.

Or

- (b) What are the ways to access the information in the file? Explain briefly.

PART C — ( $5 \times 8 = 40$  marks)

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

Each answer should not exceed 600 words.

16. (a) Explain in detail multiprocessor and distributed systems.

Or

- (b) Describe the different operating system structures.

17. (a) Explain in detail about any four scheduling algorithm.

Or

- (b) Discuss in detail about Inter Process Communication.

18. (a) Discuss in detail about any two classical problem of Synchronization.

Or

- (b) Explain the deadlock avoidance with Bankers algorithm.

19. (a) Elaborate the importance of paging and segmentation schemes.

Or

- (b) Explain any four page replacement schemes in detail.

20. (a) Explain in detail about disk scheduling policies.

Or

- (b) Discuss in detail about disk allocation methods.
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