(6 pages)

Reg. No. : ....

Code No. : 21025   Sub. Code : GMCA 61

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2016.

Sixth Semester

Computer Applications — Main

OPERATING SYSTEM

(For those who joined in July 2012 and afterwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. An operating system is ——————.

   (a) a program

   (b) an hardware

   (c) an application program

   (d) a device

2. —————— include PDAS, such as palm and packet – PCs.

   (a) Clustered systems

   (b) real time systems

   (c) handheld systems

   (d) multiprocessor systems

3. A processor to repeatedly request the status of each device, is called ——————.

   (a) Polling   (b) Interrupts

   (c) IV   (d) Network

4. The time between submission of a request and receiving the first response is ——————.

   (a) burst time   (b) turn around time

   (c) waiting time   (d) response time

5. —————— is to grant only those request for available resources that cannot possible result in a state of deadlock.

   (a) deadlock prevention

   (b) deadlock avoidance

   (c) resource allocation

   (d) deadlock detection and recovery

6. The range of a counting semaphore is —————.

(a) only between 0 and 1

(b) between 0 and 2

(c) between 0 and 10

(d) unrestricted

7. The system maintains a ————— queue consisting of all processes whose memory images are on the backing store or in memory and are ready to run.

(a) input queue

(b) output queue

(c) ready queue

(d) wait queue

8. ————— can be used to provide virtual memory.

(a) demand paging

(b) demand segmentation

(c) swapping

(d) pure demand paging

9. A disk that has a boot partitions is called a —————.

(a) boot disk

(b) format disk

(c) hard disk

(d) bad disk

10. Files are normally organized into ————— for easy access.

(a) files

(b) records

(c) directories

(d) elements

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) What is an operating system? Justify the need for the OS.

Or

(b) What do you mean by distributed systems? Discuss.

12. (a) Explain about the life cycle of a process.

Or

(b) Explain Round-Robin scheduling in detail.

13. (a) What is semaphores? Explain its advantages.

Or

(b) How is detect deadlocks? Discuss.

14. (a) What do you mean by swapping? Explain.

Or

(b) What is demand paging? Explain its basic concepts.

15. (a) Describe file system structure.

Or

(b) Discuss disk management and scheduling.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Describe the difference between multiprocessor and distributed systems.

Or

(b) Describe the advantages and disadvantages of clustered, real-time and handheld systems.

17. (a) Explain the need for interprocess communications in detail.

Or

(b) How to schedule the multiprocessors? Explain.

18. (a) Explain the classical problems of synchronization.

Or

(b) How to avoid deadlocks? Explain with the algorithm in detail.

19. (a) Explain the importance of paging and segmentation.

Or

(b) Discuss the purpose of page replacement with an algorithm.

20. (a) Explain :

(i) File access methods

(ii) Allocation methods.

Or

(b) Write short notes on :

(i) Directories structure

(ii) Disk and RAID structure.

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