

B. C. A. DEGREE EXAMINATION, APRIL 2007  
FOURTH SEMESTER

COURSE : MAJOR CORE  
PAPER : OPERATING SYSTEMS - I  
TIME : 3 HOURS  
MAX. MARKS :100

SECTION – A

Answer all the questions:

- I Choose the correct answer : ( 20 x 1 = 20)**
1. Memory management allocate the \_\_\_\_\_ when the process request it.  
a) Processor    b) Process    c) Memory resource    d) None of the above
  2. \_\_\_\_\_ is a collection of activities needed to do the work required.  
a) File    b) Process    c) Memory    d) Job
  3. The development of large number of separate free areas is  
a) Segmentation    b) Fragmentation    c) Paged    d) Partitioned
  4. In the \_\_\_\_\_ memory management contiguous address space is used.  
a) Paged    b) Partitioned    c) Relocated    d) All of the above
  5. In \_\_\_\_\_ a process is selected to run and a processor is allocated for that.  
a) Job scheduling    b) Project scheduling  
c) Process scheduling    d) None of the above
  6. A bootable disk is one which contains \_\_\_\_\_ files  
a) Compiler    b) Linker    c) Loader    d) Operating System
  7. \_\_\_\_\_ gives security to accessing of files.  
a) Password    b) Cryptography  
c) Access control matrix    d) all of the above
  8. A database system is concerned with \_\_\_\_\_ of data items.  
a) Structure    b) Interpretation    c) Both (i) & (ii)    d) None of the above
  9. Identify techniques used for managing and allocating devices  
a) Dedicated    b) Shared    c) Virtual    d) All of the above
  10. A \_\_\_\_\_ device is allocated to a job for the job's entire duration.  
a) Dedicated    b) Shared    c) Virtual    d) None of the above

**II Fill up the blanks :**

- 11. A program in execution is a \_\_\_\_\_
- 12. PMT is page \_\_\_\_\_.
- 13. A \_\_\_\_\_ selects a job to run and create corresponding processes.
- 14. A \_\_\_\_\_ is a collection of related information called records.
- 15. A \_\_\_\_\_ is one by which the computer senses the outside world.

**III True or False :**

- 16. The CPU can be interrupted.
- 17. The advantage of single contiguous allocation of memory is effective utilization of memory.
- 18. Processes waiting for an I/O are said to be in running state.
- 19. The primary function of physical file organization is to perform mapping of logical byte address into physical block address.
- 20. I/O traffic controller keeps track of the status of devices, control units and channels.

**SECTION – B**

**Answer any eight of the following: (8 x 5 = 40)**

- 21. Explain briefly the states of a process and the transitions among them
- 22. Define the following
  - (i) Interrupt      (ii) Operating System      (iii) Multiprogramming
  - (iv) Processor    (v) Job
- 23. Discuss briefly the advantages and disadvantages of partitioned allocation.
- 24. Compare best fit and first fit partition algorithms.
- 25. Assume the following jobs

Job No	Arrival Time	Run Time
1	10.00	2 hours
2	10.10	1 hour
3	10.25	25 minutes

Schedule the jobs using FIFO, Shortest job first. Which is better?

- 26. Explain semaphore briefly.
- 27. List the advantages and disadvantages of contiguous memory allocation.
- 28. Write notes on buffering.
- 29. Explain spooling.
- 30. Explain the dedicated and virtual devices.

**SECTION – C**

**(4 x 10 = 40)**

**Answer any four of the following:**

- 31. Explain in detail how an operating system acts as a resource manager.
- 32. Discuss any ONE of the following memory management schemes.
  - (i) Segmented memory management      (ii) Paged memory management
- 33. Explain round robin and priority scheduling processes.
- 34. Explain the following in detail
  - (i) Race condition      (ii) Deadlock
- 35. Explain briefly the logical file organization.
- 36. Explain the functions of I/O scheduler and I/O traffic controller.



