GIIT PROFESSIONAL COLLEGE

(Affiliated to KOLHAN UNIVERSITY, Chaibasa)

Question Bank	**Course** :	**BSc. IT – 1st Year**
Subject Code : IT02A Group A	**Subject** :	**OPERATING SYSTEM**

All questions carry equal marks.

1. Briefly explain the four major functions of an operating system.
2. **Write short notes on any two of the following:**
   a. Process state
   b. Encryption
   c. Thrashing
   d. Page Fault
3. Define the following terms :
   a. System Calls
   b. Batch System
   c. Time-sharing system
   d. Direct Memory Access
   e. Paging
4. **Write short notes on any two of the following** :
   a. Swapping
   b. Demand Paging
   c. Process Control Block
5. Explain the different features of Linux Operating System.
6. What do understand by free space management? Explain the different methods to implement it.
7. What is multi-programming? Explain multi-programming with dynamic partition with example and diagram. Haw it is better multiprogramming with fixed partition?
8. **Define the following terms :**
   a. Online Processing
   b. Virtual Memory
   c. Interrupt
   d. Utilities
   e. Distributed Operating System
9. What is Scheduler? Describe the different types of scheduler with diagram.
10. Briefly explain the four major functions of an operating system.
11. **Differentiate between** :
    a. Logical and Physical Address
    b. Internal and External Fragmentation
12. With reference to File-system Interface, explain the different access methods for retaining the information from the file.
13. Explain the term Disk Scheduling. Briefly explain various disk scheduling algorithms.
14. What is Operating System? Explain the uses of OS.
15. What is a process scheduler? State the characteristics of a good process scheduler?
16. What is scheduling? What criteria affect the scheduler's performance?
17. When does a page fault occur? Explain various page replacement strategies/algorithms.
18. What is operating System? Explain in brief the difference services which it provided.
19. Consider the following set of processes with the length of cpu burst given in ms.

Process	Burst Time	Priority
P1	10	3
P2	1	1
P3	2	4
P4	1	2
P5	5	2

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The processes are assumed to have arrived in the order p1, p2, p3, p4, p5 at time 0.

Draw the Gantt chart for FCFS, SJF, Priority and Round Robin (Quantum=1).

Find out which algorithm result in maximum Average waiting time?

20. What id Deadlock? Explain various deadlock prevention techniques?
21. Explain different techniques of disk scheduling?
22. Differentiate between pre-emptive and non-pre-emptive scheduling.
23. What is a process? What are attributes of a process?
24. Give an example of a Process State.
25. What are short, long and medium-term scheduling?
26. What are turnaround time and response time?
27. How you can differentiate between external and internal fragmentation.
    Suppose we have a paging system with 4 frames and 12 pages, where the number of frames denotes the number of pages that can be held in RAM at any given time. Assume the pages are accessed by some program in the order shown below, from left to right. Also, assume that the program has just started, so the frames are initially empty. How many page faults will be generated in all three algorithms?
    Order in which pages are accessed: 3,4, 2, 1, 4, 7, 2, 5, 3, 6, 1, 3
28. Find the page fault rate for the following given data for all three algorithms.

    Memory Locations:- 214,345,185,097,999,1547,125,267,152,394,458,124,275,145

    No of frame available:- 4 Frame size:-100

29. Describe the following commands:(10)

a. Chmod	b. Grep
c. Sort	d. Cat

30. (a) What is virtual memory? Explain it with its advantages and disadvantages.(10)
    (b) Discuss with example about the FIFO page replacement algorithm.
31. Differentiate between :(10)
    (a) Network Operating System and Distributed OS.
    (b) Spooling and Buffering.
32. Explain contiguous allocation, linked allocation and indexed allocation of file with diagram and example.
33. What is multiprogramming? Explain multi-programming with dynamic partition with example and diagram. How it is better then multi-programming with fixed partition?
34. Consider the following sequence of memory reference from 460 words programs: 10, 11, 104, 170, 73, 309, 185, 245, 246, 434, 458, 364.
    (a) Give the reference string assuming a page size of 100 words.
    (b) Find the number of page faults for the above reference string assuming 200 words primary memory

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35. What is process control block? Describe the differences among short-term, medium-term and long-term scheduling.

36. Differentiate be between any two of the following:
    (a) Buffering and Spooling
    (b) Preemptive and Non-preemptive
    (c) Multitasking and multiprocessing

37. Briefly explain the four major functions of an operating system.