VCD- 29/11/22 -FYIT- OS-SEMI-75Mks-21/2 Hrs.

N. B.: (1) **All** questions are **compulsory**.
(2) Numbers to the **right** indicate **marks**.
(3) Draw **neat labeled diagrams** wherever **necessary**.

1. **Attempt *any three* of the following:** **15 M**
   a. What is an operating system? What are different services provided by O.S.?
   b. Discuss different types of operating system.
   c. Explain layered architecture of operating system.
   d. What are different types of scheduler in O.S.?
   e. Explain different states of process with proper diagram.
   f. What is thread? Explain kernel level thread.

2. **Attempt *any three* of the following:** **15 M**
   a. Write a note on memory abstarrction.
   b. Explain the concept of virtual memory.
   c. Explain FIFO and LRU page replacement algorithm with proper example.
   d. Consider a scheduler SJF. Process P1, P2,P3 arrives at 0(arrival time for all three processes is 0). Burst time for process P1 is 5, for P2 2 and for P3 it is 3. Find turnaround time, waiting time and average turnaround time.
   e. Explain different file operation with example.
   f. List any five types of file attributes.

3. **Attempt *any three* of the following:** **15 M**
   a. Explain different interrupt handlers.
   b. Explain RAID with its different runlevel.
   c. Explain the concept of power management in O.S.
   d. What are conditions for deadlock prevention?
   e. Write a short note on DMA.
   f. For process queue 90, 170,30,118,10, [redacted],58,62. Apply FCFS and SCAN disk scheduling algorithm. Consider head position at 55.

4. **Attempt *any three* of the following:** **15 M**
   a. Give the difference between cloud computing and virtualization.
   b. Explain Type 1 & Type 2 hypervisors.
   c. Write a note on multiprocessing.
   d. What are distributed services?
   e. Write a note on directory hierarchy.
   f. Explain switch multicomputer.

5. Attempt *any three* of the following: **15 M**

a. Discuss history of unix and linux.
b. Write a note on interfaces of linux.
c. Write a note on process in linux.
d. Write a note on memory management in linux.
e. Discuss Android operating system.
f. Explain linux file system.