

**Operating System**  
**Paper Code-2K5-CS-1**  
**Full Marks-100 Time – 3 Hours**

**PART-A**

1. Attempt any 10 questions. (One or Two Sentences) 10x2=20
- a) Define Operating Systems as resource manager.
  - b) Give the full form of NOS and RTOS.
  - c) Define Process and PSW.
  - d) What is Context Switching or Switching of Context?
  - e) What is KERNEL or System call?
  - f) What is BOS?
  - g) State the full form of VIRUS and WORM.
  - h) What is Compiler/Assembler?
  - i) Define Loader/Linker.
  - j) What are PCB and PID?
  - k) Give one example of each Preemptive and Non-Preemptive scheduling.
  - l) What is Belady's anomaly?
  - m) State two page replacement technique.
  - n) Give two examples of Disk Scheduling.

2. Attempt any 5 questions. (Short Answer Type) 5x4=20
- a) Explain fundamental difference between Network OS and Distributed OS and RTOS.
  - b) Briefly explain the four necessary conditions for avoiding the DEADLOCK.
  - c) Distinguish between Paging and Segmentation Mapped table.
  - d) What is Process State Transition?
  - e) Distinguish among following terminologies i) Multiprogramming ii) Multitasking iii) Multiprocessor systems.
  - f) How are System Calls executed?
  - g) Explain the difference between long term and short term and medium term schedulers.
  - h) What is Internal and External fragmentation?

**PART-B**

- Attempt any 3 questions (Broad Answer Type) 3x20=60
3. a) Explain the role of Operating System from different perspectives of its function. 10  
 b) Explain in detail the phases of Compiler with block diagram and example. 10
  4. a) Explain different type of CPU scheduling with examples. 10  
 b) Write short note on CPU scheduling criteria. Explain Long term and short term and medium term Schedulers. 5+5
  5. a) Explain the concept of Process and also describe the contents of a Process Control Block (PCB) 5+5  
 b) Find the average turnaround time and average waiting time for the processes given in the table 5+5  
 Below using FCFS.
 

Process	CPU burst time (in ms)
P1	24
P2	4
P3	4
  6. a) Explain Paging and Segmentation with block diagram in details. 10  
 b) Memory partitions of 105kb,510 kb,210 kb,305kb,610 kb are available how would best ,worst, first fit algorithm to place Processes 212,417,112,426 in order.Which are the best algorithm? 10
  7. a) Describe the SSTF disk scheduling algorithm using the following data. The dist head is 10  
 Initially at position-cylinder 53.the cylinder sequence of requests is 99, 184, 36, 123, 15, 125, and 66. 68. Find the Total head movement.  
 b) Short Notes (Any Two) 5+5  
 i) SSTF ii) SCAN iii)LOOK