

SE INFT

Time: 2 Hours

SE-Sem IV-NEP-2020 May-June 26

Max. Marks: 60

N.B.:

- i. Question No. 1 is compulsory.
- ii. Attempt any THREE questions out of the remaining FOUR.
- iii. Figures to the right indicate full marks.
- iv. Assume suitable data if necessary.

Q.1 Attempt any THREE 15

- a) Explain the Seven State Model of process in OS
- b) Explain Internal Fragmentation, external fragmentation and compaction with suitable example
- c) Differentiate between open and proprietary operating system.
- d) What is system call? Explain with diagram Layered Architecture.

Q.2 a) Explain Peterson's algorithm with pseudo code and example 07

- b) Consider the set of 6 processes whose arrival time and burst time are given. If the CPU scheduling policy is Round Robin with time Quantum = 2 ms, calculate the average waiting time and average turnaround time 08

Process ID	Arrival Time (ms)	Burst Time (ms)
P1	0	4
P2	1	5
P3	2	2
P4	3	1
P5	4	6
P6	6	3

Q3) a) What is RAID? Explain Different RAID level with Suitable Example 07

- b) What is Internal fragmentation? Explain static partitioned allocation with partition sizes 400, 180, 100, 300, and 45. Assuming First fit and Best fit method indicate the memory status after memory request for sizes 95, 180, 285, 380, 30 08

Q4) a) Explain Banker's algorithm with example 07

- b) Given the Page reference string: 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2 08

Number of Frames = 3. Find the Number of Page Faults using a) FIFO b) LRU c) MRU
d) Optimal Page Replacement

Q5) a) What is open-source operating system? What are the design issues of Mobile operating system and Real time operating system? 08

- b) State all special Operating system. State 1 key Design issue in each and at least 2 application of each 07
