NATIONAL ENGINEERING COLLEGE, K.R.NAGAR, KOVILPATTI.
(An Autonomous Institution, Affiliated to Anna University, Chennai)
Department of Electronics and Communication Engineering

Internal Assessment Test-2

15EC35E – Principles of Operating System **Date: 23/06/2020**
Class & Sem: III-ECE A&B, V-sem **Total Marks: 50**

CO3: Explore various techniques of allocating memory to processes and realize the role of virtual memory. (K2)
CO4: Evaluate disk scheduling algorithms and interpret the mechanisms adopted for file accessing in distributed applications. (K2)
CO5: Express the methods used to implement virtualization and general structure of distributed operating systems. (K3)

PART – A (9x2= 18 Marks)

1.	Explain the difference between internal and external fragmentation.	CO3	K2
2.	What is the cause of thrashing? How does the system detect thrashing? Once it detects thrashing, what can the system do to eliminate this problem?	CO3	K2
3.	Differentiate sector sparing and sector slipping.	CO4	K2
4.	Consider a hard disk with: 8surfaces, 32 tracks/surfaces, 256 sectors/track, 64 bytes/sector, What is the capacity of the hard disk? The disk is rotating at 1200 RPM, what is the data transfer rate?	CO4	K2
5.	Define data stripping in RAID structure.	CO4	K1
6.	Describe the benefits of virtualization.	CO5	K1
7.	What is the difference between computation migration and process migration?	CO5	K2
8.	Define message switching connection strategy.	CO5	K2
9.	Is it always crucial to know that the message you have sent has arrived at its destination safely? If your answer is "yes," explain why. If your answer is "no," give an appropriate example.	CO5	K3

PART – B (2x16=32 Marks)

10.(i)	Describe how pages should only be brought into memory if the executing process demands in Demand Paging method. Under what circumstances do page faults occur? What are the actions to be taken by the operating system when a page fault occurs? (6)		CO3	K2
10.(ii)	A disk drive has 3000 cylinders, numbered 0 to 2999. The drive is currently serving a request at cylinder 1170 and the previous request was at cylinder 1875. The queue of pending requests in FIFO order is: 1089, 2212, 296, 1800, 546, 718, 2356, 493, 1965, 2787 What is the total distance (in cylinders) starting from the current head position for the following disk-scheduling algorithms? i. SSTF ii. SCAN iii. C-LOOK iv. C-SCAN (10)		CO4	K3
11.(i)	Discuss the three techniques used for allocating disk blocks for file system.	(6)	CO4	K2
11.(ii)	Explain the type of virtual machines and their implementation.	(6)	CO5	K2
11.(iii)	Compare and contrast network operating system and distributed operating system.	(4)	CO5	K2