

U.G. 6th Semester Examination - 2022**BCA****Course Code : BBCADSHT5 [DSE-5]****Course Title : Advance Operating System**

Full Marks : 40

Time : 2 Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer any **ten** questions: 1×10=10
- a) Name any two fields of disk inode.
 - b) Mention two benefits of allocating memory via asynchronous mapping.
 - c) State the characteristics of UNIX file system.
 - d) Give two examples of distributed operating system.
 - e) What is thread?
 - f) What is the full form of RTSP?
 - g) What is fault and what is failure?

- h) Who provides the interface to access the services of the operating system?
- i) What is granularity?
- j) Mention two desirable features of a good global scheduling algorithm.
- k) Which unit is responsible for mapping the virtual address to physical address?
- l) What is thrashing?
- m) What do you mean by clock synchronization?
- n) Write two major key challenges of distributed system.
- o) Define Load Balancing.

2. Answer any **five** questions: 2×5=10
- a) What is unidirectional and bidirectional stream?
 - b) Why second chance algorithm is a special variant of FIFO?
 - c) Differentiate between local and remote resource.
 - d) What are the basic requirement for mutual exclusion algorithm?

- e) Make a comparison chart for distributed system and distributed computing.
- f) What is swapping? What is its purpose?
- g) Difference between Deadlock Prevention and Deadlock Avoidance.
- h) What is the effect of thrashing and page fault frequency?

3. Answer any **two** questions: $5 \times 2 = 10$

- a) i) Why do processes communicate?
ii) What are the types of group communication in distributed system?
 $1+4$
- b) i) What is distributed shared memory and how it is differ from message passing?
ii) Mention two advantages of distributed shared memory. $(1+2)+2$
- c) What is serializability theory? How it is implemented in distributed database system?
 $2+3$

4. Answer any **one** question: $10 \times 1 = 10$

- a) i) Suppose there is a service request queue, requesting service for the following

tracks:

98, 185, 120, 15, 127, 76 and 125

Assume that the read/write head is positioned at 50th track and total number of tracks be 200. Count the total number of head movements for each of the following scheduling algorithm–

FCFS, SSTF, SCAN, C-SCAN

- ii) Why shell not considered to be a part of OS? $8+2=10$
- b) i) What are the designing issues of advanced operating system?
ii) Define sleep and wakeup algorithm. $5+5$
- c) i) Discuss about state-less and state-ful servers.
ii) Write a very short note on process migration.
iii) How can you change the size of a process in UNIX? $4+4+2$