



SE – 209

IV Semester B.A./B.Sc. Examination, September 2020
(F+R) (CBCS) (2015-16 and Onwards)
COMPUTER SCIENCE – IV
Operating System and Unix

Time : 3 Hours

Max. Marks : 70

Instruction : Answer *all* the Sections.

SECTION – A

I. Answer **any ten** questions. **Each** question carries **two** marks. (10×2=20)

- 1) Mention the function of operating system.
- 2) Differentiate between preemptive and non-preemptive scheduling.
- 3) What is Semaphore ?
- 4) What are the necessary conditions for deadlock ?
- 5) What is fragmentation ? Mention two types of fragmentation.
- 6) Define the following :
 - (i) Seek time
 - (ii) Rotational latency.
- 7) What is shell ? Mention different types of shell.
- 8) What is Boot Strap ?
- 9) Name any 2 wild cards used in unix.
- 10) Define a Zombie process.
- 11) Differentiate between while and until loop.
- 12) What is positional parameters ?

SECTION – B

II. Answer **any five** questions. **Each** question carries **10** marks. (5×10=50)

- 13) a) Explain
 - (i) Distributed Systems
 - (ii) Real Time Systems. 5
- b) Briefly explain structure of operating system. 5

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- 14) a) Explain different types of schedulers. 4
 b) Consider the following set of processes

Process	Arrival time	CPU Burst Time
P1	0	8
P2	2	4
P3	4	6
P4	6	2

Find the average waiting time, response time and turn around time using Round Robin Scheduling algorithm (use Quantum time = 20 ms) 6

- 15) a) Explain Dining-Philosophers problem. 5
 b) Explain deadlock detection algorithm. 5
- 16) a) Briefly explain segmentation. 5
 b) Explain various disk scheduling algorithms. 5
- 17) a) Explain Unix System Architecture. 5
 b) Explain Unix File system structure. 5
- 18) a) Explain the Unix process creation. 5
 b) Explain any five process related commands. 5
- 19) a) Explain Numeric and string test operators. 5
 b) Describe the different branching control structures in unix. 5
- 20) a) Write a shell program to find simple interest and compound interest, using select case statement. 5
 b) Write a shell program to print all prime numbers between m and n ($m < n$). 5