



**DCCA -- 403**

**IV Semester B.C.A. Degree Examination, Sept./Oct. 2023**  
**(NEP – Freshers)**  
**COMPUTER APPLICATION**  
**Operating System Concepts**

Time : 2½ Hours

Max. Marks : 60

**Instruction : Answer all the Sections.**

**SECTION – A**

I. Answer **any six** questions. **Each** question carries **two** marks. **(6×2=12)**

- 1) What is an operating system ?
- 2) What is inter-process communication ?
- 3) What is a thread ?
- 4) What is pre-emptive scheduling ?
- 5) What is race condition ?
- 6) What is semaphore ? Mention its types.
- 7) Define logical and physical address.
- 8) What is dynamic loading ?
- 9) List the various file attributes.

**SECTION – B**

II. Answer **any four** questions. **Each** question carries **six** marks : **(4×6=24)**

- 10) Explain functions of an operating system.
- 11) Explain the different types of threads.

**P.T.O.**



- 12) Consider the following processes with their CPU burst time in milliseconds and arrival time=0.

Process	CPU Burst
P1	10
P2	1
P3	2
P4	5

Draw the Gantt chart illustrating the execution of these processes using FCFS.

Calculate :

- i) Average waiting time
  - ii) Average turnaround time
- 13) Explain methods for handling deadlocks.
- 14) Write a note on segmentation.
- 15) Explain any two directory structures.

### SECTION – C

III. Answer **any three** questions. **Each** question carries **eight** marks : **(3×8=24)**

- 16) a) Explain time sharing and real time operating system. 4
- b) Write a note on operating system calls. 4
- 17) a) Write a note on schedulers ? 4
- b) Explain Round Robin scheduling with example. 4
- 18) a) Write a note on threading issues. 4
- b) Write a note on scheduling criteria. 4
- 19) a) What is fragmentation ? Explain the types of fragmentation. 4
- b) Explain dining philosopher problem using semaphore. 4
- 20) a) Explain FIFO page replacement algorithm with example. 4
- b) What is file accessing method ? Explain sequential file access methods. 4