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**