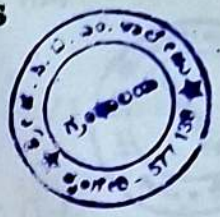
Sixth Semester B.Sc., Degree Examinations



May /June 2026

(NEP Scheme)

COMPUTER SCIENCE

NSF0740 : Operating System

Time: 2 hrs.] *[Max.Marks:60*

Instructions to Students :

1) *The students should legibly write Section number along with question numbers within the margin ONLY.*
2) *The answers without Section number and question numbers will not be valued.*
3) *Section – I Multiple Choice Questions should be answered in the First Page of Main answer book and same questions shall not be answered repeatedly.*
4) *Any identifications like marking, ticking, dots etc., in the options of MCQ (SECTION - I) on the question paper is strictly prohibited. Do not write anything (Except Reg. No.) on the question paper.*

SECTION – I

I. ***Select the most appropriate answer from options provided :*** ***10X1=10 Marks***

I-1) The operating system works between

a) User and computer
b) Network and user
c) One user to another user
d) None of the above

I-2) Which of the following is a single user operating system

a) Windows b) MAC
c) MS-DOS d) All of the above

I-3) PCB stands for

a) Process Communication Block b) Process control block
c) Power Cancel block d) None of the above

I-4) _____ is used for creating a new process in the operating system.

a) Read b) Fork
c) Born d) All of the above

I-5) Which of the following scheduling reduces process flow time?

a) FCFS b) LIFO
c) SJF d) All of the above

Contd…2

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I-6) Graphical representation of activity against time of a process is _____

a) Gantt chart
b) Run Chart
c) CPU time chart
d) GAT chart

I-7) A system is in a safe state, only if there exists a _____

a) Safe Allocation
b) Safe resource
c) Safe sequence
d) Both A and B

I-8) Banker's algorithm is used to

a) Prevent Deadlock
b) Deadlock recovery
c) Solve the deadlock
d) None of the above

I-9) When does page fault occurs ?

a) Page is present in memory
b) Deadlock occurs
c) Buffering occurs
d) Page does not present in memory

I-10) Paging in operating system is _____

a) Memory management scheme
b) Network management scheme
c) Internet management scheme
d) None

SECTION – II

II. ***Answer any FIVE of the following questions :*** *5X3=15 Marks*

II-1) List and explain the functions of operating system.

II-2) Discuss the open source operating system.

II-3) Explain Inter – process communication.

II-4) Differentiate independent process and co-operating process.

II-5) Explain the various scheduling criterias.

II-6) Discuss the necessary conditions for deadlock.

II-7) Explain FIFO page replacement algorithm with an example.

II-8) Differentiate between logical and physical address space.

Contd...3

SECTION – III

III. ***Answer any THREE of the following:*** ***3X 5= 15 Marks***

III-1) Define operating system. Explain time sharing and distributed operating systems.

III-2) With a neat diagram, explain the different process states.

III-3) With an example, briefly explain shortest job first scheduling algorithm.

III-4) Write a note on deadlock recovery.

III-5) Elaborate on thrashing in virtual memory.

SECTION – IV

IV. Answer the following questions. ***2X 10= 20 Marks***

IV-1) i) Explain the real time system and Hand – Held System.

ii) What is a process ? Write a note on context swicthing. (5+5)

OR

i) For the given process P_1, P_2 and P_3, draw Gantt chart and compute the average waiting time using FCFS and Priority CPU scheduling algorithm.

Process	Burst Time	Priority
P_1	6	2
P_2	3	1
P_3	4	3

ii) With a neat diagram, briefly explain PCB. (5+5)

IV-2) i) Briefly explain the Banker's Algorithm. And for given data check whether system is in deadlock ? Find the safe sequence of process.

Process	Allocation			Max			Available		
	A	B	C	A	B	C	A	B	C
P_0	3	2	2	6	3	3	1	1	1
P_1	1	1	2	2	2	3			
P_2	3	3	3	5	5	5			

(10)

OR

i) With proper diagram, briefly explain segmentation and segmentation with paging.

ii) Explain swapping and paging in memory management. (5+5)

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