Seat No.

Total No. of Pages : 2

MAR_APR 2026 SUMMER EXAMINATION

1154 B.Tech. CBCS

Sub. Name: Operating Systems

Sub. Code: 86170

Day and Date: Friday ,29-05-2026 **Total Marks: 70**

Time: 10:30 AM To 01:00 PM

Instructions:

Special Inst.:
1. **Question no. 6 is compulsory**
2. **Solve any four questions from Q. No. 1 to Q. No. 5**
3. **Assume suitable data wherever necessary**
4. **Figures to the right indicate full marks**

Q1) Solve the Following Questions. **[15]**

a. Define Operating System and Explain in details Types Of Operating System **[8]**

b. Explain the following operations on process- **[7]**
1. Process Creation.
2. Process Termination.

Q2) Solve the Following Questions. **[15]**

a. Consider 5 process with arrival time and bust time given below **[8]**
If CPU Scheduling Policy is **Priority-Non Preemptive**. Calculate average waiting time and average turn-around time. (Higher number represent higher priority).

Process Id	Arrival time	Burst Time	Priority
P1	0	4	2
P2	1	3	3
P3	2	1	4
P4	3	5	5
P5	4	2	5

b. Describe in detail Process States with state diagram. **[7]**

Q3) Solve the Following Questions. **[15]**

a. Describe Dining Philosopher Problem along with its solution. **[8]**

b. Explain Contiguous memory allocation in detail. **[7]**

Q4) Solve the Following Questions. **[15]**

a. Calculate number of page faults accrues if system uses First-In-First-Out **[8]**

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(FIFO) page replacement algorithm for following given information.
Reference string:- 7,0,1,2,0,3,0,4,2,3,0,3,0,3,2,1,2,0,1,7,0,1 No of Frames- 3 frames (3 pages can be in memory at a time per process)

b. Explain Direct Memory Access (DMA) and Six Step Process to Perform DMA Transfer. **[7]**

Q5) Solve the Following Questions. **[15]**

a. Explain concept Of Deadlock along with four Necessary condition for deadlock. **[8]**

b. Explain the architecture Of Unix Operating System. **[7]**

Q6) Write short note (Any Two) **[10]**

a. Segmentation **[5]**

b. Process Control Block (PCB) **[5]**

c. Semaphores **[5]**

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -
This Question Paper may be distributed for following Subjects as common code.
सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (1154) B.Tech. CBCS (86170) Operating Systems Part 2 SEM 4

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