SHRI VISHWAKARMA SKILL UNIVERSITY, DUDHOLA, PALWAL

B. Tech. Computer Science & Engg. (AI/ML)- forth Semester

First SESSIONAL TEST (SESSION: 2023-2024)

Subject Code: ETCS202
Sem: 4th

Subject Name: Operating system
Maximum Marks: 20

SECTION A

Q1. Very Short answers type

$5 \times 1 = 5$

Sl.	Question Description	Unit	RBT Level	Co Mapped
Q 1	Consider a virtual memory system with a FIFO page replacement policy. For an arbitrary page access pattern, increasing the number of page frames in the main memory will (A) Always decrease the number of page faults (B) Always increase the number of page faults (C) Sometimes increase the number of page faults (D) Never affect the number of page faults	3	understanding	CO1, CO2
Q2	Which of the following process state transitions is/are not possible? A) Running to Ready B) Waiting to Running C) Ready to Waiting D) Running to training	2	understanding	CO1
Q3	Consider the following statements about process transitions from a system using pre-emptive scheduling: I) Running process to ready state II) Ready process can move to running state III) A Blocked process move to running state IV) A Blocked process move to ready state Which of the following is true? A) I, II and III B) II and III C) I, II and IV D) I, III, II and IV	2	understanding	CO1, CO2
Q4	Suppose the system contains n Processes and system uses the Round Robin Algorithm for CPU Scheduling the which data structure is best suited ready ready queue of the process A) Stack B) Queue C) Circular queue D) tree	2	understanding	CO1 and CO2
Q5	What is translation look aside buffer- (TLB)?	3	Remembering	CO1

SECTION B

Q2. Long answers type (understanding, applying, analysing, evaluating)

$2 \times 2 = 4$

Sl.	Question Description	Unit	RBT Level	CO Mapped
Q 2.1	Suppose the time to service a page fault is on average 10 milliseconds, while a memory access takes 1 microsecond. Then a 99.99% hit ratio results in an average memory access time of?	3	Applying	CO1 and CO2
Q 2.2	Consider a demand paging system with four-page frames (initially empty) and an LRU page replacement policy. For the following page reference string 7, 2,7,3, 2,5,3,	3	Applying	CO1 and CO2

	4,6,7,7,1,5,6,1 the page fault rate, defined as the ratio of number of page faults to the number of memory accesses (rounded off to one decimal place) is_____.			

Q3. Long answers type (understanding, applying, analysing, evaluating) **6 marks**

Sl.	Question Description	Unit	RBT Level	CO Mapped
Q 3	Explain the FCFS and SJF Scheduling. Also define the prediction of length of next CPU burst	2	Understanding	CO1 and CO2

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