Enroll. No._____

MARWADI UNIVERSITY
MU-FOT
CE-AI, CE-FOT1 (MU), IT-FOT1 (MU)
Semester 4 - Summer

Subject : OPERATING SYSTEM (01CE0401)
Date : 09-Apr-2022 **Time : 1 Hours 15 Minutes** **Total Marks : 30**

Instructions :

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Que.1 Answer the following questions. **[6]**
(A)

(1) State the four conditions, which must occur to have deadlock in the system.

(2) Explain Belady's anomaly.

(3) Define page fault.

(4) Define Binary semaphore.

(5) List out various page replacement algorithms used for page replacement.

(6) deadlock

Que.2

(A) Write a short note on worst -fit, best-fit, first-fit, and next-fit strategies for disk space allocation with their merits and demerits. [6]

(B) Explain Bounded Producer Consumer Problem without semaphore. [6]

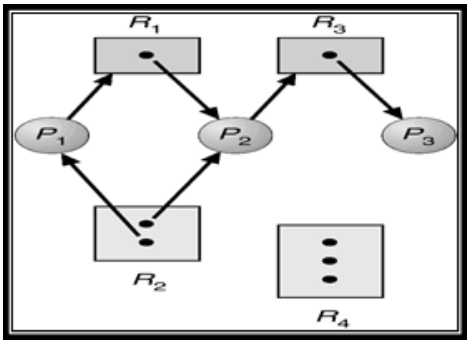
OR

(B) Explain mutual exclusion and any two solutions to achieve it. [6]

Que.3

(A) Explain in detail deadlock prevention [8]

(B) Consider the following RAG graph and find the safe sequence if there is no deadlock [4]



OR

(A) A process references 5 pages A, B , C, D, E in the following order A; B; C; D; A; B; E; A; B; C; D; E. Assuming that the replacement algorithm is LRU and FIFO, find out the number of page faults during the sequence of references, starting with an empty main memory with 3 frames. Repeat for four page frames. [8]

(B) Explain kinds of file structure. [4]

---Best of Luck---

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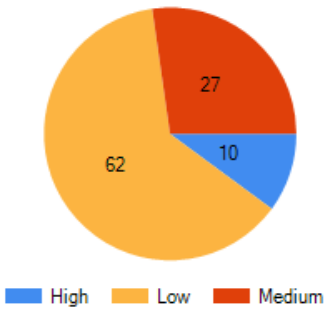
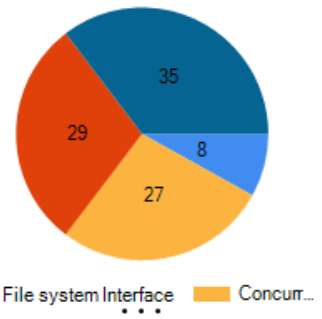
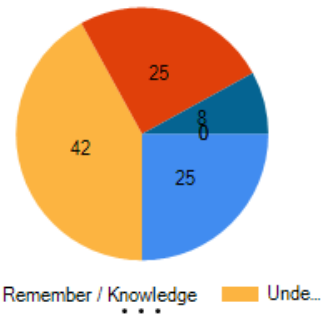
Difficulty Level	Weightage		No of Question	Total Marks	Question List
	Recommended	Actual			
High	20	10.42	2	5	1(A), 3(B)
Low	20	62.50	8	30	1(A), 2(A), 2(B), 3(A)
Medium	60	27.08	3	13	1(A), 3(A), 3(B)

Module Name	Weightage		No of Question	Total Marks	Question List
	Recommended	Actual			
File system Interface	10	8.33	1	4	3(B)
Concurrency Control (IPC)	25	27.08	3	13	1(A), 2(B)
Principles of deadlock	25	29.17	4	14	1(A), 3(A), 3(B)
Memory Management	40	35.42	5	17	1(A), 2(A), 3(A)

Blooms Taxonomy	Weightage		No of Question	Total Marks	Question List
	Recommended	Actual			
Remember / Knowledge	20	25.00	7	12	1(A), 2(A)
Understand	30	41.67	3	20	2(B), 3(A)
Apply	25	25.00	2	12	3(A), 3(B)
Analyze	15	8.33	1	4	3(B)
Evaluate	10	0.00	0	0	
Higher order Thinking	0	0.00	0	0