Final OS 2020 – 1442 Dr.Rehab

Question 1

1.5 points Saved

1. if a process size is **84,546** bytes with page size **1-KB**, the resulted internal fragmentation of the last frame is

- a. 1024
- b. A. 446
- c. A. 578

Question 2

1.5 points ✓ Saved

Consider the following snapshot of a system in safe state:

Need				
	A	B	C	D
P0	0	0	0	0
P1	0	7	5	0
P2	1	0	0	2
P3	0	0	2	0
P4	0	6	4	2

Available			
A	B	C	D
1	5	2	0

Allocation				
	A	B	C	D
P0	0	0	1	2
P1	1	0	0	0
P2	1	3	5	4
P3	0	6	3	2
P4	0	0	1	4

If a request from process **P2** arrives for **(1,0,0,1)**, can the request be **granted**?

- ● a. Not granted since resources are not available
- ○ b. Not granted because the system will be in unsafe state
- ○ c. Not granted since process has exceeded its need claim

⚠ Moving to the next question prevents changes to this answer.

Question 3

1.5 points ✓ Saved

Given the segment table (figure 4 in the file) :

Segment Table

Seg No	Limit	Base
0	1000	1400
1	400	6300
2	300	4300
3	1100	2200
4	1000	4700

1. the physical address of this **segmentation logical address < 2, 330 >** is

○ a. 4630

◉ b. A. invalid address

○ c. 600

Question 4

1.5 points Saved

Consider the following snapshot of a system in safe state:

Need				
	A	B	C	D
P0	0	0	0	0
P1	0	7	5	0
P2	1	0	0	2
P3	0	0	2	0
P4	0	6	4	2

Available			
A	B	C	D
1	5	2	0

Allocation				
	A	B	C	D
P0	0	0	1	2
P1	1	0	0	0
P2	1	3	5	4
P3	0	6	3	2
P4	0	0	1	4

If a request from process **P0** arrives for **(0,0,2,0)**, can the request be granted?

- ○ a. Not granted since resources are not available
- ● b. Not granted since process has exceeded its need claim
- ○ c. Not granted because the system will be in unsafe state

Question 5

1.5 points ✓ Saved

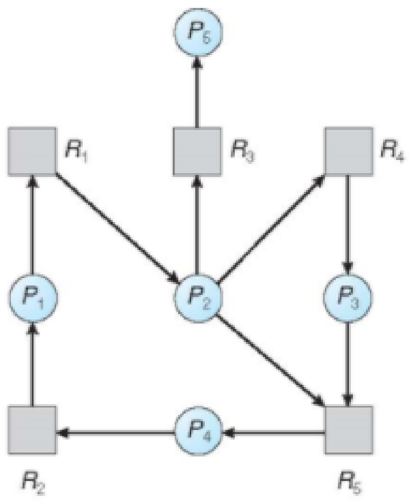
Given six memory partitions of 300 KB, 600 KB, 360 KB, 200 KB, 750 KB, and 125 KB (in order) how would the **first-fit** algorithms place process of size **358** KB?

- (selected) a. 600
- b. 360
- c. 300

Question 6

1.5 points ✓ Saved

Is there a **deadlock** in the following **Resource Allocation Graph** (figure 1 in the file) with one instance for each recourse



- ○ a. There is a possibility of deadlock
- ◉ b. Yes, because there is a cycle
- ○ c. No, because there are resources equal to the processes

Question 7

1.5 points Saved

Consider the following snapshot of a system in safe state:

Need

	A	B	C	D
P0	0	0	0	0
P1	0	7	5	0
P2	1	0	0	2
P3	0	0	2	0
P4	0	6	4	2

Available

A	B	C	D
1	5	2	0

Allocation

	A	B	C	D
P0	0	0	1	2
P1	1	0	0	0
P2	1	3	5	4
P3	0	6	3	2
P4	0	0	1	4

If a request from process **P1** arrives for **(0,4,2,0)**, can the request be **granted**?

- a. Granted because the system will be in safe state
- b. Not granted because the system will be in unsafe state
- c. Not granted since resources are not available

Question 8

1.5 points ✓ Saved

1. Consider the following set of processes, with the length of the CPU burst given in milliseconds: *(a smaller priority number implies a higher priority)*

Process	Burst Time	Priority
P1	2	3
P2	1	1
P3	10	3
P4	5	2

The processes are assumed to have arrived in the order *P*1, *P*2, *P*3, all at time 0.

the **non-preemptive priority** scheduling algorithms is used. the **average waiting time** is around:

- ◉ a. 3.75
- ○ b. 8.25
- ○ c. 2.25

Question 9

1.5 points Save Answer

1. The number of **frames** needed for a process size **84,546** bytes with page size **1-KB** is

- ○ a. 82
- ◉ b. 83
- ○ c. A. 86575104

Question 10

1.5 points Saving Answer

In the following is a snapshot of a system's resources (figure 2 in the file) with 5 processes.

	Allocation			Max			Available		
	A	B	C	A	B	C	A	B	C
P_0	0	1	0	7	5	3	3	3	2
P_1	2	0	0	3	2	2			
P_2	3	0	2	9	0	2			
P_3	2	1	1	2	2	2			
P_4	0	0	2	4	3	3			

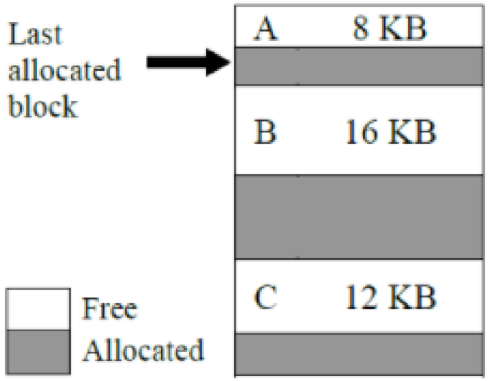
1. The need resources for **P0** are

- a. seven for A, four for B, three for C
- b. zero for A, one for B, zero for C
- c. seven for A, five for B, three for C

Question 11

1.5 points Save Answer

Consider the following view of physical memory (figure 3 in the file)



1. To allocate **10 KB block** using **Best Fit** strategy, the block should go to:

- a. A. Hole C
- b. A. Hole B
- c. Hole A

Question 12

1.5 points Saved

1. Consider the following set of processes, with the length of the CPU burst given in milliseconds:

Process	Burst Time
P1	8
P2	1
P3	2

.The processes are assumed to have arrived in the order $P1$, $P2$, $P3$ all at time 0.

the **Round Robin** scheduling algorithms is used with

quantum = 2

What is the turnaround time of P3 ?

- a. 5
- b. 3
- c. 2

Question 13

1.5 points ✓ Saved

Given the segment table (figure 4 in the file) :

Segment Table

Seg No	Limit	Base
0	1000	1400
1	400	6300
2	300	4300
3	1100	2200
4	1000	4700

1. the physical address of this **segmentation logical address < 3, 129 >** is:

- ○ a. 132
- ○ b. A. 1229
- ◉ c. 2329

Question 14

1.5 points Save Answer

1. Consider the following set of processes, with the length of the CPU burst

given in milliseconds:

Process	Burst Time
P1	10
P2	1
P3	2

The processes are assumed to have arrived in the order $P1$, $P2$, $P3$, all at time. the **SJF** scheduling algorithms is used. What is **average waiting time** is around

- a. 7
- b. A. 5.67

  1.33
- c.

Question 15

1 points ✓ Saved

In the **RR scheduling**, the **performance issue** if the time quantum is very **small** is:

- ○ a. Convey effect
- ○ b. both answers are correct
- ◉ c. context switch overhead

Question 16

1 points ✓ Saved

The interval from the time of submission of a process to the time of completion is termed as:

- (selected) a. turnaround time
- b. response time
- c. waiting time

Question 17

1 points ✓ Saved

:Scheduling problem when lower-priority process **holds** a lock needed by higher-priority process is

- a. Priority Inversion
- b. A. Bounded Waiting
- c. A. Race condition

Question 18

Which of the following scheduling algorithms could result in **starvation**?

- ○ a. First-come, first-served
- ○ b. Round robin
- ◉ c. Shortest job first

Question 19

Which of the following scheduling algorithms could result in **lower average turnaround**?

- a. First-come, first-served
- b. Shortest job first
- c. Round robin

Question 20

One of the popular solutions to **starvation** is

- a. Priority inheritance
- b. Aging
- c. Both A and B

Question 21

1 point

The **First variation** of Readers-Writers Problem in which no reader kept waiting unless writer has permission to use shared object suffers from:

- a. Starvation for a reader process
- b. Starvation for both writer and reader processes
- c. Starvation for an writer process

Question 22

To avoid deadlock :

- a. resource allocation must be done only once
- b. each process declares the maximum number of resources
- c. all deadlocked processes must be aborted

Question 23

1 points ✓ Saved

A **critical section** is a program segment:

- ○ a. Which should runs in specific certain amount of time
- ◉ b. Where shared resources are accessed synchronically
- ○ c. Which avoids deadlooks

Question 24

1 points Save Answer

1. If **valid-invalid bit** in page table entry is invalid that means

- a. Page is memory resident
- b. Page is not in memory
- c. invalid reference

Question 25

1 points Save Answer

When allocating memory **larger** than the requested size that can cause:

- a. A. Fatal error
- b. external fragmentation
- c. Internal fragmentation

Question 26

1 points Save Answer

:if there is **no** free frame in main memory, OS need

○ a. A. Abort the process

○ b. Trap as page fault

◉ c. Execute page replacement algorithm

Question 27

1 points ✓ Saved

Demand Paging is a virtual memory that:

- a. starts a process with no pages in memory
- b. brings entire process into memory at load time
- c. brings a page into memory only when it is needed

Question 28

1 points Save Answer

Which of the following scheduling algorithms could have a better **response**?

- ○ a. Shortest job first
- ○ b. First-come, first-served
- ◉ c. Round robin

Question 29

1 points Save Answer

Which of the following scheduling algorithms could result in **convey effect**?

- a. First-come, first-served
- b. Round robin
- c. Shortest job first

Question 30

1 points ✓ Saved

1. If the CPU needs to access the memory location of **logical address 436**, can the CPU access that address (where the **relocation register** value is **1600** and the **limit register** value is **500**)

○ a. A. Yes, because 436 < 1600

◉ b. A. Yes, because 436 < 500

○ c. A. No because it exceeds limit

Question 31

1 points ✓ Saved

Which process should we choose to **abort** to **recovery** from deadlock?

- (●) a. Process has a low priority
- ( ) b. Interactive process
- ( ) c. Both answers are correct

Question 32

1 points Saved

1. Algorithm that replace page that has **not been used** in the most amount of time

- a. A. Optimal Algorithm
- b. Least Recently Used
- c. First-In-First-Out

Question 33

1 points ✓ Saved

Shuffling memory contents to place all free memory together in one large block is:

- ○ a. A. Paging
- ○ b. A. Segmentation
- ◉ c. Compaction

Question 34

1 points ✓ Saved

Starvation issue in **Priority Scheduling** means:

- (selected) low priority processes may never execute
- high priority processes may never execute
- low priority processes behind high process

Question 35

1 points ✓ Saved

Which of the following scheduling algorithms are the best for **time sharing** system?

○ a. First-come, first-served

○ b. Shortest job first

◉ c. Round robin

Question 36

1 points ✓ Saved

1. If the CPU needs to access the memory location of **logical address 436**, what is **the physical Address** (where the **relocation register** value is **1600** and the **limit register** value is **500**

○ a. A. 936

◉ b. A. 2036

○ c. A. 2100