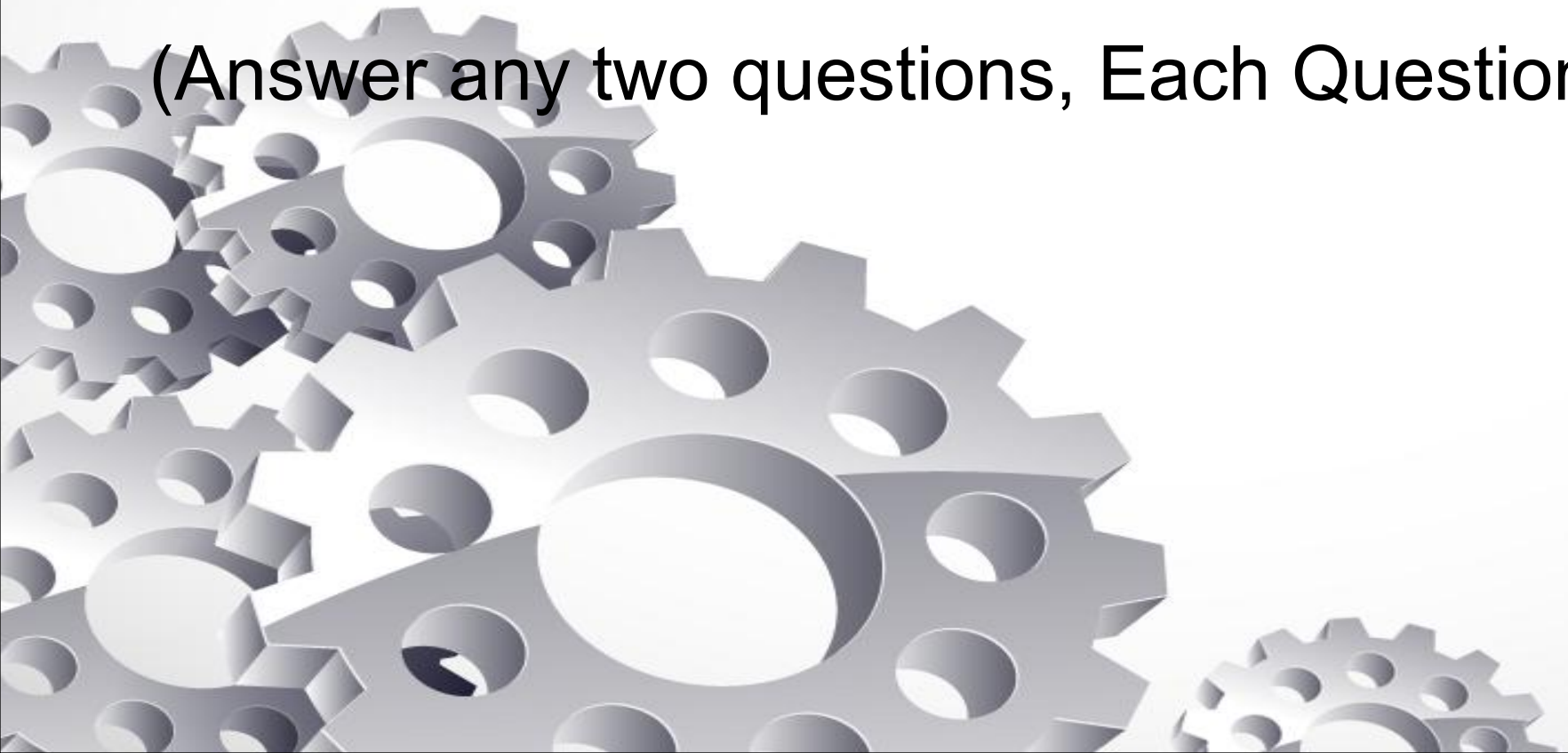
Assignement

(Answer any two questions, Each Questions are of 5 Marks)



Q1.

Consider the following snapshot of a system:

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

Illustrate that the system is in a safe state by demonstrating an order in which the processes may complete.

If a request from process P1 arrives for (1, 1, 0, 0), can the request be granted immediately?

X = (Roll Number % 7) + 3
Y = (Roll Number % 8) + 3

Q2

- Consider the following snapshot of a system using data structure in the Banker's algorithm,

	Allocation	*Max*	*Available*
	A B C D	A B C D	A B C D
P0	6 0 1 2	4 0 0 1	3 2 1 1
P1	1 7 5 0	1 1 0 0	
P2	2 3 5 6	1 2 5 4	
P3	1 6 5 3	0 6 3 3	
P4	1 6 5 6	0 2 1 2	

Answer the following questions:

(i) Calculate the total no of resources.

(ii) What is the content of the matrix *Need*?

(iii) Is the system in a safe state? Find the safe sequence if it does exist.

Q3

Given memory partitions of 100K, 500K, 200K, 300K, and 600K (in order), how would each of the First-fit, Best-fit, and Worst-fit algorithms place processes of size 212K, 417K, 122K, and 426K (in order)? Which algorithm makes the most efficient use of memory?

Q4

There is a memory with four partitions 4K, 8K, 20K, and 2K (in order). Total *eight* processes come at time *0 ms* with different request size and the execution time (ms) as given in the following table.

Process no.	P1	P2	P3	P4	P5	P6	P7	P8
Req. size	2K	14K	3K	6K	6K	10K	7K	4K
Execution time	4	9	2	8	1	6	5	3

Calculate the time at which process P7 will be completed if *Best-Fit* method is used in fixed partition memory allocation. Explain with proper diagram.