**Question 1**

Complete

Mark 5.00 out of 5.00

Mark Your attendance.

Select one:

- a. Present
- b. Absent

The correct answers are: Present, Absent

**Question 2**

Complete

Mark 4.00 out of 4.00

Are the following vectors linearly dependent? If so, find the relation between them.

$X_1 = [2\ 1\ -3],\ X_2 = [-1\ 1\ 2], X_3 = [5\ 1\ -4]$

After solving this homogeneous system AX = 0

Rank of matrix A is 3

Whether r = no. of variables?

- No
- (•) Yes

The correct answer is: Yes

Hence system will have

- No solution
- Infinite non-trivial solutions
- (•) Only trivial solution

The correct answer is: Only trivial solution

Hence given set of vectors are linearly

- Dependent
- (•) Independent

The correct answer is: Independent

If $k_1X_1 + k_2X_2 + k_3X_3 = 0$ where k3=-1Then

$k_1 =$ 0

$k_2 =$ 0

**Question 3**

Complete

Mark 4.00 out of 4.00

Are the following vectors linearly dependent? If so, find the relation between them.

$X_1 = [2\ \ 2\ -1],\ X_2 = [-2\ -3\ 2],\ X_3 = [1\ 2\ 0]$

After solving this homogeneous system AX = 0

Rank of matrix A is 3

Whether r = no. of variables?

(•) Yes ( ) No

The correct answer is: Yes

Hence system will have

( ) Infinite non-trivial solutions ( ) No solution (•) Only trivial solution

The correct answer is: Only trivial solution

Hence given set of vectors are linearly

(•) Independent ( ) Dependent

The correct answer is: Independent

If $k_1X_1 + k_2X_2 + k_3X_3 = 0$ Then

$k_1 =$ 0

$k_2 =$ 0

$k_3 =$ 0

**Question 4**

Complete

Mark 6.00 out of 6.00

Solve the following equation by Gauss Seidal iteration method. (up to 4 decimal places with out roundoff) : 5x-2y+3z=18, x+7y-3z=-22, 2x-y+6z=22

1st iteration:

x= 3.6000

y= -3.6571

z= 1.8571

2nd iteration:

x= 1.0229

y= -2.4931

z= 2.9102

3rd iteration:

x= 0.8567

y= -2.018

z= 3.0448

**Question 5**

Complete

Mark 6.00 out of 6.00

Solve the following equation by Jacobi's iteration method. (up to 4 decimal places with out roundoff) : $4x+y+3z=17$, $x+5y+z=14$, $2x-y+8z=12$

1st iteration:

x= 4.2500

y= 2.8000

z= 1.5000

2nd iteration:

x= 2.4250

y= 1.6500

z= 0.7875

3rd iteration:

x= 3.2469

y= 2.1575

z= 1.1000