Question 1

Complete

Mark 6.00 out of 6.00

Test the consistency for the following equation and if possible solve them

$$x+y+2z=0$$
$$x+2y+3z=0$$
$$x+3y+4z=0$$
$$3x+4y+7z=0$$

Rank of matrix A = 2

Is System of equation is consistence?

○ No ◉ Yes

The correct answer is: Yes

System of equation have solution Infinitely many Solutions

In Solution $\begin{bmatrix} x \\ y \\ z \end{bmatrix}$ if x=2 then

y = 2

z = -2

Question 2

Complete

Mark 4.00 out of 4.00

If the following system has a Non-trivial solution,

$$px+qy+rz=0$$
$$qx+ry+pz=0$$
$$rx+py+qz=0$$

then which of the following option is **TRUE**?

Select one:

- $p+q-r=0$ *or* $p=-q=r$
- $p-q+r=0$ *or* $p=q=-r$
- $p+q+r=0$ *or* $p=q=r$
- $p-q+r=0$ *or* $p=-q=-r$

The correct answer is:

$p+q+r=0$ *or* $p=q=r$

Question 3

Complete

Mark 4.00 out of 4.00

The system of equations

$$x+2y+z=0$$
$$x-z=0$$
$$x+y=0$$

has

Select one:

- a trivial solution only
- no solution
- non- trivial unique solution
- (1,2,3) is the solution

The correct answer is: non- trivial unique solution

Question 4

Complete

Mark 5.00 out of 5.00

Mark Your attendance.

Select one:

- a. Present
- b. Absent

The correct answers are: Present, Absent

Question 5

Complete

Mark 6.00 out of 6.00

Solve
$$\begin{aligned} x_1 - 3x_2 - 8x_3 &= -10 \\ 3x_1 + x_2 - 4x_3 &= 0 \\ 2x_1 + 5x_2 + 6x_3 &= 13 \end{aligned}$$
After converting this system into AX = b form,

Rank of A is 2

Rank of [A|b] is 2

Hence system will have

- Unique solution
- No solution
- (●) Infinite solutions

The correct answer is: Infinite solutions

Which of the following is most correct solution of this system

(A) $x_1 = -1 - 2t,\ x_2 = 3 + 2t,\ x_3 = t$ where t is a parameter.
(B) $x_1 = -1 + 2t,\ x_2 = 3 - 2t,\ x_3 = t$ where t is a parameter.
(C) No solution.
(D) Unique solution $x_1 = 1, x_2 = 1, x_3 = 1$.

- A
- (●) B
- D
- C

The correct answer is: B