NEET - JEE - ONLINE TEST - 3

MATHS - QUESTIONS

1. The rank of the matrix $\begin{bmatrix} 2 & -4 \\ -1 & 2 \end{bmatrix}$ is

   1)1 2)2 3.0 4. 8

2. The rank of the matrix $\begin{bmatrix} 7 & -1 \\ 2 & 1 \end{bmatrix}$ is

   1. 9 2. 2 3. 1 4. 5

3. If A and B are matrices conformable to multiplication then $(AB)^T$ is

   1. A^TB^T 2. B^TA^T 3. AB 4. BA

4. $(A^T)^{-1}$ is equal to

   1. A^{-1} 2. A^T 3. A 4. $(A^{-1})^T$

5. If ρ (A) = r , then which of the following is correct?

   1. all the minors of order r which do not vanish.
   2. A has atleast one minor of r which does not vanish and all higher order minors vanish.
   3. A has atleast one (r+1) order minor which vanishes.
   4. all (r+1) and higher order minors should not vanish.

6. Which of the following is not elementary transformation?

   1. $R_i \leftrightarrow R_j$ 2. $R_i \rightarrow 2R_i+R_j$ 3. $C_i \rightarrow C_j+C_i$ 4. $R_i \rightarrow R_i+C_j$

7. Equivalent matrices are obtained by

   1. taking inverses 2. taking transposes
   3. taking adjoints 4. taking finite number of elementary transformations

8. In echelon form, which of the following is incorrect?

   1. Every row of A which has all its entries 0 occurs below every row which has a non-zero entry.
   2. The first non-zero entry in each non-zero row is 1.
   3. The number of zeros before the first non-zero element in a row is less than the number of such zeros in the next row.
   4. Two rows can have same number of zeros before the first non-zero entry

9. If $\Delta \neq 0$ then the system is

   1. consistent and has unique solution
   2. consistent and has infinitely many solutions
   3. inconsistent
   4. either consistent or inconsistent

10. In the system of 3 linear equations with three unknowns, if $\Delta = 0$ and one of $\Delta_x, \Delta_y, or\, \Delta_z$ is non-zero then the system is
    1. consistent
    2. inconsistent
    3. consistent and the system reduces to two equations
    4. consistent and the system reduces to a single equation.
11. In the system of 3 linear equations with three unknowns, if $\Delta = 0, \Delta_x = 0, \Delta_y = 0, \Delta_z = 0$ and atleast one 2x2 minor of $\Delta \neq 0$ then the system is
    1. consistent
    2. inconsistent
    3. consistent and the system reduces to two equations
    4. consistent and the system reduces to a single equation.
12. In the system of 3 linear equations with three unknowns, if $\Delta = 0$ and all 2x2 minors of $\Delta = 0$ and atleast one of 2x2 minor of $\Delta_x\, or\, \Delta_y\, or\, \Delta_z$ is non-zero then the system is
    1. consistent
    2. inconsistent
    3. consistent and the system reduces to two equations
    4. consistent and the system reduces to a single equation.
13. In the system of 3 linear equations with three unknowns, if $\Delta = 0$ and all 2x2 minors of $\Delta, \Delta_x, \Delta_y, \Delta_z$ are zeros and atleast one non-zero element is in Δ then the system is
    1. consistent
    2. inconsistent
    3. consistent and the system reduces to two equations
    4. consistent and the system reduces to a single equation.
14. Every homogeneous system(linear)
    1. is always consistent
    2. has only trivial solution
    3. has infinitely many solution
    4. need not be consistent
15. If $\rho(A) = \rho[A, B]$ then the system is
    1. consistent and has infinitely many solution
    2. consistent and has a unique solution
    3. consistent
    4. inconsistent
16. If $\rho(A) = \rho[A, B]$ = the number of unknowns then the system is
    1. consistent and has infinitely many solution
    2. consistent and has a unique solution
    3. consistent

4. inconsistent

17. $\rho(A) \neq \rho[A, B]$ then the system is
1. consistent and has infinitely many solution
2. consistent and has a unique solution
3. consistent
4. inconsistent

18. In the system of 3 linear equations with three unknowns, $\rho(A) = \rho[A, B] = 1$, then the system
1.has unique solution
2. reduces to 2 equations and has infinitely many solutions
3. reduces to a single equations and has infinitely many solutions
4. is inconsistent

19. In the homogeneous system with three unknowns, $\rho(A)$ = number of unknowns then the system has
1. only trivial solution
2. reduces to 2 equations and has infinitely many solutions
3. reduces to a single equations and has infinitely many solutions
4. is inconsistent

20. In the system of three linear equations with three unknowns, in the non-homogeneous system $\rho(A) = \rho[A, B] = 2$, then the system
1. has unique solution
2. reduces to two equations and has infinitely many solutions
3. reduces to a single equations and has infinitely many solutions
4. is inconsistent