**Matrices**

**Choose the most appropriate option (a, b, c or d).**

Q 1. If and then A + B is

(a)  (b)  (c)  (d) none of these

Q 2. If A2 = 8A + kI where then k is

(a) 7 (b) -7 (c) 1 (d) -1

Q 3. The matrix is a singular matrix if λ is

(a)  (b)  (c) -5 (d) none of these

Q 4. If the matrix then A2 is

(a)  (b)  (c) nonexistent (d) none of these

Q 5. If and such that A2 = B then α is

(a) 1 (b) -1 (c) 4 (d) none of these

Q 6. If then

(a) λ = 3, μ = 4 (b) λ = 4, μ = -3

(c) no real values of λ, μ are possible (d) none of these

Q 7. If AB = 0 where and then |θ - φ| is equal to

(a) 0 (b)  (c)  (d) π

Q 8. If then A-1 exists (i.e., A is invertible) if

(a) λ ≠ 4 (b) λ ≠ 8 (c) λ = 4 (d) none of these

Q 9. The reciprocal matrix of is

(a)  (b)  (c)  (d) none of these

Q 10. If then the value of |adj A| is equal to

(a) 5 (b) 0 (c) 1 (d) none of these

Q 11. If then A-1 is equal to

(a) AT (b) A (c) adj A (d) none of these

Q 12. If the A2 is equal to

(a) A (b) I (c) AT (d) none of these

Q 13. If then f(x + y) is equal to

(a) f(x) + f(y) (b) f(x) – f(y) (c) f(x) . f(y) (d) none of these

Q 14. If where ω is the complex cube root of 1 then (A + B)C is equal to

(a)  (b)  (c)  (d) 

Q 15. If then AB is equal to

(a) 0 (b) I (c) 2I (d) none of these

Q 16. If A be a matrix such that then A is

(a)  (b)  (c)  (d) none of these

Q 17. The rank of the matrix is

(a) 3 (b) 2 (c) 1 (d) none of these

Q 18. The rank of the matrix is 3 if

(a)  (b)  (c)  (d) none of these

Q 19. The rank of the matrix is

(a) 4 (b) 3 (c) 2 (d) none of these

Q 20. The system of equations

x + y + z = 2

2x – y + 3z = 5

x – 2y – z + 1 = 0

written in matrix form is

(a)  (b) 

(c)  (d) none of these

Q 21. If then x is

(a) 2 (b) -2 (c) 14 (d) none of these

Q 22. If then x.y is equal to

(a) -5 (b) 5 (c) 4 (d) 6

**Choose the correct options. One or more options may be correct.**

Q 23. is a

(a) rectangular matrix (b) singular matrix (c) square matrix (d) nonsingular matrix

Q 24. If and then

(a) A + B exists (b) AB exists (c) BA exists (d) none of these

Q 25. If then

(a) A3 = 9A (b) A3 = 27A (c) A + A = A2 (d) A-1 does not exist

1c 2b 3a 4b 5d 6d 7b 8b 9a 10c

11c 12b 13c 14a 15a 16c 17b 18a 19b 20c

21b 22a 23cd 24c 25acd