Everwin Matric. Hr. Sec. School

23.11.19 Material of the month - November Marks: 40

STD:XI (A-D) Mathematics Time: 30 Mins

1. If $15C_{3r}=15C_{r+3}$, then r is equal to _____.

   a) 5 b) 4 c) 2 d) 3

2. If $(n+1)C_3=2$, nC_{21} then n=_____.

   a) 3 b) 5 c) 4 d) 6

3. The value of $9^{\frac{1}{3}}$, $9^{\frac{1}{9}}$, $9^{\frac{1}{27}}$.....∞ is _____.

   a) 3 b) 1 c) 9 d) none of these

4. The number of permutations of n different things taking r at a time when 3 particular things are to be included is _____.

   a) $(n-3)P_{r-3}$ b) $(n-3)P_r$ c) $r!n-3c_{r-3}$ d) nPr_3

5. If the sum of n terms of an A.P be $3n^2-n$ and its common difference is 6, then its first term is _____.

   a) 3 b) 2 c) 1 d) 4

6. The number of ways to average the letters of the word CHEESE are _____.

   a) 240 b) 120 c) 720 d) 6

7. When $h^2=ab$, the angle between the pair of straight lines $ax^2+2hxy+by^2=0$ is _____.

   a) $\frac{\pi}{3}$ b) $\frac{\pi}{4}$ c) $\frac{\pi}{6}$ d) 0^0

8. If $\sum n=210$ then $\sum n^2$=_____

   a) 2160 b) 2970 c) 2870 d) None of these

9. If $\frac{T_2}{T_3}$ is the expansion of $(a+b)^n$ and $\frac{T_3}{T_4}$ is the expansion of $(a+b)^{n+3}$ are equal then n=_____.

   a) 3 b) 5 c) 4 d) 6

10. If $mC_1=nC_2$ then _____.

    a) 2m=n b) 2m=n(n+1) c) 2m=n(n-1) d) 2n=m(m-1)

11. The value of x so that 2 is the slope of the line through (2, 5) and (x, 3) is _____.

    a) -1 b) 0 c) 1 d) 2

12. For all $n\in N$, $3\times5^{2n+1}+2^{3n+1}$ is divisible by _____.

    a) 17 b) 23 c) 19 d) 25

13. If in an infinite G.P first term is equal to 10 times the sum of all successive terms, then its common ratio is _____.

    a) $\frac{1}{10}$ b) $\frac{1}{9}$ c) $\frac{1}{11}$ d) $\frac{1}{20}$

14. The term without x in $\left(2x-\frac{1}{2x^2}\right)^{12}$ is _____.

    a) 495 b) -495 c) -7920 d) 7920

15. $5C_1+5C_2+5C_3+5C_4+5C_5$ is equal to _____.

    a) 30 b) 32 c) 33 d) 31

16. The figure formed by the line $ax\pm by\pm c=0$ is a _____.

    a) rerctangular b) rhombus c) square d) none of these

17. If the points (a, 0) (0, b) and (x, y) are collinear, then _____.

    a) $\frac{x}{a}-\frac{y}{b}=1$ b) $\frac{x}{a}+\frac{y}{b}=1$ c) $\frac{x}{a}-\frac{y}{b}=-1$ d) $\frac{x}{a}+\frac{y}{b}=0$

18. A point equidistant from the line $4x+2y+10=0$, $5x-12y+26=0$and $7x+24y-50=0$ is _____.

    a) (1, -1) b) (0, 0) c) (0, 1) d) (1, 1)

19. The value of $\begin{vmatrix}1 & 1 & 1\\ 1 & 1+sin\theta & 1\\ 1 & 1 & 1+cos\theta\end{vmatrix}$ is _____.

    a) 3 b) 1 c) $\frac{1}{2}$ d) 2

20. The coefficient of x^3 in $\sqrt{\frac{1-x}{1+x}}$, $|x|<1$ is _____.

    a) $\frac{1}{2}$ b) $\frac{3}{8}$ c) $\frac{-3}{8}$ d) $\frac{-1}{2}$

21. If $\begin{bmatrix}2x+y & 4x\\ 5x-7 & 4x\end{bmatrix}=\begin{bmatrix}7 & 7y-13\\ y & x+6\end{bmatrix}$, then the value of x+y is _____.

    a) 3 b) 6 c) 4 d) 5

22. The series $1+4x+8x^2+\frac{32}{3}x^3+\ldots\ldots\ldots+\infty$ is _____.

a) e^x b) e^{2x} c) e^{8x} d) e^{4x}

23. If $7x^2-8xy+A=0$ represents a pair of perpendicular lines, then A is _____.

a) 7 b) -7 c) -8 d) 8

24. If A is square matrix of order 3, then the number of minors in determinant of A are _____.

a) 3 b) 27 c) 9 d) 21

25. The negative of a matrix is obtained by multiplying it by _____

a) -1 b) 1 c) I d) A^{-T}

26. If $\begin{pmatrix} 2 & \lambda & -3 \\ 0 & 2 & 5 \\ 1 & 1 & 3 \end{pmatrix}$ is a singular matrix, then λ is ____.

a) $\lambda=2$ b) $\lambda \neq 2$ c) $\lambda=\frac{-8}{5}$ d) $\lambda \neq \frac{-8}{5}$

27. The locus of a point which moves such that it maintains equal distance from the fixed points is a _____.

a) straight line b) circle c) line bisector d) angle bisector

28. The distance between the line 12x-5y+9=0 and the point (2, 1) is _____.

a) $\pm\frac{28}{13}$ b) $\frac{28}{13}$ c) $\frac{-28}{13}$ d) none of these

29. If $A=\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$ then A^2 is equal to _____.

a) $\begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$ b) $\begin{pmatrix} 0 & 1 \\ 0 & 1 \end{pmatrix}$ c) $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$ d) $\begin{pmatrix} 1 & 0 \\ 1 & 0 \end{pmatrix}$

30. If A is a matrix of order 3×3, then $(A^2)^{-1}$=_____.

a) $\frac{1}{A^2}$ b) $(A^{-1})^2$ c) I d) A^{-2}

31. The value of $\begin{vmatrix} x+1 & x+2 & x+a \\ x+2 & x+3 & x+b \\ x+3 & x+4 & x+c \end{vmatrix}$=0 where a, b, c are in H.P is

a) (x+1) (x+2) (x+3) b) 0 c) I d) x-1

32. If $A=\begin{bmatrix} a & x \\ y & a \end{bmatrix}$ and if xy=1, then det (AA^T) is equal to _____.

a) $(a-1)^2$ b) $(a^2+1)^2$ c) $(a^2-1)^2$ d) (a^2-1)

33. If A and B are square matrices of order 3 and |A| =5, |B| =3 then |3AB| is _____.

a) 405 b) 81 c) 135 d) 27

34. If $f(x)=\begin{vmatrix} 0 & x-a & x-b \\ x+a & 0 & x-c \\ x+b & x+c & x \end{vmatrix}$ then

a) f(a)=0 b) f(b)=0 c) f(0)=0 d) f(1)=0

35. Slope of x axis or a line parallel to x-axis is _____.

a) 0 b) positive c) negative d) infinity

36. If A is a square matrix, then which of the following is not symmetric?

a) $A+A^T$ b) A^TA c) $A-A^T$ d) AA^T

37. The product of any matrix by the scalar _____ is the null matrix.

a) 1 b) 7 c) 0 d) matrix itself

38. The angle between the lines 2x-y+3=0 and x+2y+3=0 is ____

a) 30^0 b) 60^0 c) 90_0 d) 45^0

39. Distance between the lines 5x+3y-7=0 and 15x+9y+14=0 is

a) $\frac{35}{\sqrt{34}}$ b) $\frac{35}{2\sqrt{34}}$ c) $\frac{1}{3\sqrt{34}}$ d) $\frac{35}{2\sqrt{34}}$

40. |Adj A|=_____ where A is square matrix of order.

a) $|A|^2$ b) $|A|^3$ c) |A| d) I