Loreto Convent Entally
Half-yearly Examination 2021-2022
Class-X
Subject: Mathematics

Full Marks: 50 **Time: 1 hr 30 minutes.**

Section -1

(Attempt all the question)

Choose the correct options : [30× 1]

1.If one of the roots of the quadratic equation $(k-1)x^2+kx+1=0$ is -3 , then the value of k is –
a) 4/3 b) -4/3 c) 2/3 d) -2/3.

2.The identity matrix of order 2 is

a) $\begin{bmatrix}0 & 1\\1 & 0\end{bmatrix}$ b) $\begin{bmatrix}1 & 0\\0 & 1\end{bmatrix}$ c) $\begin{bmatrix}0 & 2\\2 & 0\end{bmatrix}$ d) $\begin{bmatrix}i & 0\\0 & i\end{bmatrix}$

3.If one of the zeroes of a quadratic equation of the form $ax^2+bx+c=0$ is the negative of the others , then it

a) has no linear term and negative const. term. b) has no linear term and positive const. term.

c) can have a linear term but const. term is negative. d) can have a linear term but const. term is positive.

4. 10^{th} term of the A.P :5 , 8 , 11, 14 …….. is

a) 32 b)35 c) 38 d) 185.

5. If $\frac{x+y}{x-y}=\frac{16}{9}$, then x: y is

a) 5:1 b) 1:5 c) 25:7 d) 7:25

6.The first 4 terms of an A.P , whose 1^{st} term is -2 and common difference is -2 , are-

a) -2 , 0 ,2 ,4 b) -2 , 4 , -8 , 16 c) -2 , -4 , -6, -8 d) -2 , -4 , -8 , 16.

7. If p>0 and q ≥ 0 , then P+ q ……..p.

a) < b) > c) ≥ d) None of these.

8. 2. Degree of the equation having roots as -2 and 5 is-

a) 1 b) 2 c) 3 d) more than 3.

9. Two matrices are said to be equivalent if

a) corresponding elements are equal b) order same and corresponding elements are same

c) matrices are of same order d) none of these.

10. If A is a matrix of order 3× 2 then A^t is a matrix of order

a) 3× 2 b) 2× 2 c) 2× 3 d) 3× 3

11.If 2 ,a , 18 are in continued proportion then values of a are

a) $\pm$ 9 b)$\pm$6 c) $\pm$3 d) only 6.

12. What is the common difference of an A.P in which $a_{18} - a_{14} = 32$.

a) 8 b) -8 c) 4 d) -4.

13.If $\frac{x}{a} = \frac{y}{b} = \frac{z}{c}$ then value of $\frac{ax-cz}{(a+c)(x-z)}$ is

a) 1 b) -1 c) 0 d) none of these

14. which of the following is not a quadratic equation?

a) $x^2 - 1 = 0$ b)(x-2) (x-5)=0 c) $(x^2 + 2)x = 0$ d) $2x^2 + x + 1 = 0$.

15. Find x if 1+4+7+……+x=287 and x is the 14th term

a) 40 b)34 c) 45 d) 50.

16. If two triangles are similar, then

a) their areas are equal b) perimeters are equal

c) corresponding sides are equal d) corresponding sides are proportional.

17. If -3x - 5 < 10 , then

a) x> -5 b) x< -5 c) x<5 d) x>-5

18. If (x - 2) is a factor of the polynomial $x^2 - ax + 2$. Then value of a is

a)3 b) 0 c) 1 d) 4

19. If f(x) = $x^3 + 3x^2 + 3x + 1$ and f(-1) = 0 find a factor of the polynomial f(x).

a) (x - 3) b) (x +1) c) (x – 1) d) (x + 3).

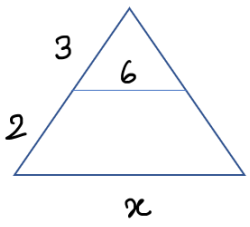
20. Mr. Sharma deposited Rs P/month for 2 years in a cumulative deposit account, if he receives Rs Q at the time of maturity, then the interest earned by him is –

a) Q - 12P b) Q - P c) Q -2P d) Q – 24P

21. If $-\frac{1}{x} > 5$, then

a) x>-5 b) x<-5 c) x> -1/5 d) x $\geq -\frac{1}{5}$.

22. In the figure find x



a) 2 b) 5 c) 10 d) 6.

23. Sum of first 16 multiple of 5 is –

a) 460 b) 60 c) 640 d) 80

25. A polynomial P(x) has 4 factors, what is the degree of P(x)?

a) 0 b) 2 c) 3 d) 4

26. What is net GST for a dealer?

a) Input tax – Output tax b) Output tax – input tax c) only input d) only output

27.The remainder when a polynomial P(x) = $x^3 - 3x^2 + 2x - 1$ is divided by x-2 is

a) -5 b) -1 c) 5 d) 4

28. What are the taxes levied on an Intra-State supply?

a) SGST b) CGST c) both a &b d) IGST.

29. In $\Delta ABC \sim \Delta DEF$ and $\frac{AC}{DF} = \frac{BC}{EF}$.

a) $\angle B = \angle E$ b) $\angle A = \angle D$ c) $\angle C = \angle F$ d) $\angle A = \angle F$

30. If one of the factor of $x^2 + x - 20$ is (x + 5) then

a) x-4 b) x+2 c) x+4 d) x-5.

Section -2

31.Mrs Asha deposited Rs 400 every month in a recurring deposit account for $2\frac{1}{2}$ years . If he gets Rs 1085 as interest at the time of maturity, then

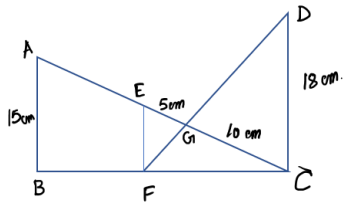
i) the rate of interest per annum per annum is –

a) 6% b) 7% c) 8% d) 9%

ii) Total money deposited in a year is –

a)4000 b) 4800 c) 12000 d) 8400 [2+1]

32.In the figure given below ,then



i) EF

a) 9 b) 6 c) 18 d) 20

ii) AC

a) 25 b) 20 c) 15 d) 10

[2+2]

33. a,7 ,b , 23 , c are in A.P .Then a , b, c are

i) a) a=2 b) a= -1 c) a= 0 d) a= 3

ii) a) b= 15 b) b= 10 c) b= 20 d) b=9

iii) a) c= 12 b) c= 31 c) c= 20 d)c= 30. [1+1+1]

34. A dealer in Kolkata supplied goods to a wholesaler in Kolkata for Rs40,000 at rate of GST 28%

i) CGST = ……..

a)0 b) 5600 c) 11200 d) 10000

ii) SGST= …….O

a) 0 b) 5600 c) 11200 d) 2800

iii) IGST

a) 0 b) 5600 c) 11200 d) 2800

iv) Amount of bill

a) 40000 b) 51200 c) 48000 d) 68000 [4]

35.On dividing f(x) = $x^3 - 7x^2 + 14x - 8$ by (x - 1)

i)the quotient polynomial is

a) $x^2 - 6x + 8$ b) $x^2 + 6x + 8$ c) $x^2 - 8x + 6$ d) $x^2 + 8x - 6$

ii) remaining factors are

a) (x-2) (x- 4) b) (x-3) (x-4) c) (x- 4) (x- 6) d) (x- 5) (x-6) [2+1]

36.Amit deposited Rs 150 per month in a bank for 8 months under recurring deposit scheme, Then the

i) interest earned is

a) 12 b) 30 c) 50 d)36

ii) the maturity value is –

a) 1236 b) 1230 c) 1212 d) 1250 [2+1]

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