AL KHOZAMA INTERNATIONAL SCHOOL,DAMMAM

Affiliated to CBSE – New Delhi, No:5730019

Pre-midterm Examination (2017 -2018)

Subject:MATHEMATICS

Date:11.06.2017 **Set: A** **Time: 3 Hours**

Class:10 **Max. Marks: 80**

Instructions to the Candidates:

- *All Questions are compulsory.*
- *The question paper consists of* ***30*** *questions divided into four sections A,B,C and D.* ***Section-A*** *comprises of* ***6*** *questions of* ***1 mark*** *each,* ***Section-B*** *comprises of* ***6*** *questions of* ***2 marks*** *each,* ***Section-C*** *comprises of* ***10*** *questions of* ***3 marks*** *each and* ***Section-D*** *comprises of* ***8*** *questions of* ***4 marks*** *each.*
- *There is no overall choice.*

SECTION-A

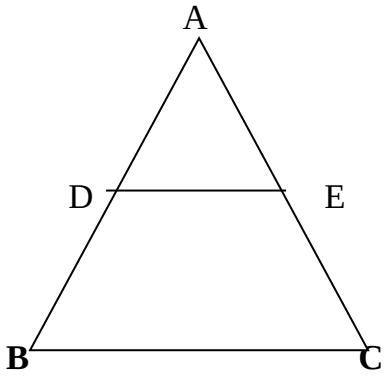
1. HCF of 36 and 56 is 4, find the LCM.
2. Write the decimal expansion of $\frac{13}{3125}$.
3. The equations 4x + 7y = 10 and 10x +ky = 25 represent coincident lines, find the value of 'k'.
4. Check whether the following linear equations are consistent or not.

   x – 3y – 3=0

   3x – 9y – 2 = 0
5. If D,E,F are respectively the mid points of the sides BC,CA and AB of ΔABC and ar(ΔABC) is 24 cm^2 , the find the area ofΔDEF.
6. If median = 15 and mean = 16, find mode of the distribution.

SECTION-B

7. Express 3240 as a product of its prime factors.
8. The sum and product of zeros of a quadratic polynomial are – ½ and – 3 respectively. What is the quadratic polynomial?
9. Find the value of m for which the pair of linear equations 2x + 3y -7 = 0 and (m-1)x + (m+1)y = (3m – 1) has infinitely many solutions.
10. Find the solution of the following system of equations using substitution method
    3x +2y – 11 = 0 ; 2x – 3y + 10 = 0.
11. In the figure , DE ∥ BC. If AD = 2.5cm, BD =3 cm and AE= 3.5cm , find the length of AC.



12. Find the median of first 10 prime numbers.

SECTION-C

13. Use Euclid's division algorithm, find the HCF of 56,96 and 404.
14. Find the zeros of the polynomial $6x^2 + 13x – 5$, and verify the relationship between the zeros and coefficients.
15. Find all zeros of the polynomial $x^4 – 3x^3 – x^2 + 9x – 6$, if two of its zeros are $-\sqrt{3}$ and $\sqrt{3}$
16. Divide $2x^3 + 3x^2 – 17x – 3$ by $x^2 – x – 6$ and verify the division algorithm.
17. Solve using cross multiplication method:
    6x + 5y = 11 ; 9x + 10y = 21
18. Solve : $\frac{10}{x+y} + \frac{2}{x-y} = 4$

    $\frac{15}{x+y} - \frac{5}{x-y} = -2$
19. Prove that the ratio of the areas of two similar triangles is equal to the square of the ratio of their corresponding sides.
20. Sides AB and BC and median AD of a triangle ABC are respectively proportional to sides PQ and QR and median PM of ΔPQR .Show that ΔABC ~ ΔPQR.

21. Find the mean of the following(Use step deviation method)

Class	Frequency
0-80	22
80-160	35
160-240	44
240-320	25
320-400	24

22. The mean of the following frequency is 500 .Find the values of missing frequencies.

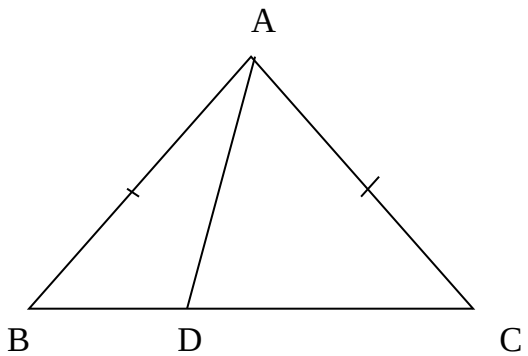
Age (in years)	Number of people
0-20	17
20-40	**X**
40-60	32
60-80	**Y**
80-100	19
Total	120

SECTION-D

23. Prove that $\sqrt{5}$ is an irrational number.
24. On dividing $x^3 - 3x^2 + x + 2$ by a polynomial g(x) , the quotient and the remainder were $(x - 2)$ and$(-2x + 4)$ respectively. Find g(x).
25. Solve the following system of the equations graphically:

$2x + 3y = 8$; $x + 4y = 9$

26. Some village of a city jointly established a trust for women and child welfare. In a school of same area , 25 boys and 20 girls of class-10 donated Rs. 7000 whereas 30 boys and 15 girls of class-9 donated Rs.7500.Find the money donated by each boy and each girl? What values are depicted from this question?
27. ABC is a triangle in which AB = AC and D is any point in BC. Prove that $AB^2 - AD^2 = BD.CD$



28. State and prove Pythagoras' theorem.
29. Find median and mode of the following data.

Class	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	8	7	15	20	12	8	10

30. Draw less than type ogive for the following distribution. Fin the median from the graph and also check the result through calculation.

Class	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	10	8	12	24	6	25