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A Complete Institute For Students
CREATING AND SETTING EXAMPLES FOR FUTURE...

X MATHS FULL SYLLABUS TEST

TIME: 2 ½ HOURS **M.M.: 66**

SECTION-A

1. After how many places of decimals will the decimal expansion of $\frac{43}{2^4 \times 5^3}$ terminate? **1**

2. Find the zeroes of quadratic polynomial $4x^2 - 4x - 3$. **1**

3. A circle touches all four sides of quadrilateral ABCD whose sides AB = 18 cm, BC = 27 cm and CD = 12 cm. Find AD. **1**

4. If $2\,\text{cosec}^2\,\theta\,(1 - \cos\theta)(1 + \cos\theta) = K + 2$, find the value of K. **1**

5. If the difference between the circumference and the radius of a circle is 37 cm, then find the radius of circle. **1**

6. A bag contains cards numbered from 1 o 50. A card is drawn from the bag. Find the probability that the number on this card is divisible by 3 and 5. **1**

SECTION-B

7. At an international airport, a plane takes off from give different runways at 3, 4, 8, 12 and 15 minutes intervals. At 7:30 am, planes took off from all five runways simultaneously. When will give planes take off together again? **2**

8. Find the sum of all two digit odd positive numbers. **2**

9. Find the point on the x-axis which is equidistant from (2, –5) and (–2, 9). **2**

10. If $x \cos A = 1$ and $\tan A = y$ prove that $x^2 - y^2 = 1$. **2**

11. Evaluate: $\frac{\cos 70^\circ}{\sin 20^\circ} + \frac{\cos 55^\circ \ \text{cosec}\ 35^\circ}{\tan 5^\circ \ \tan 25^\circ \ \tan 45^\circ \ \tan 65^\circ \ \tan 85^\circ}$ **2**

12. A lawn is in the form of an equilateral triangle with semi-circles on the outside of the three sides. If the side of the triangle is 28 m. Calculate the cost of putting grass at the rate of Rs. 2.50 per m^2. **2**

SECTION-C

13. Show that $7 + \sqrt{3}$ is irrational. **3**

14. What should be subtracted from the polynomial $3x^3 + 10x^2 - 14x + 9$ if $(3x - 2)$ is a factor of this polynomial. **3**

15. Prove that the parallelogram circumscribing a circle is a rhombus. **3**

16. Prove that the area of an equilateral triangle described on one side of a right angled isosceles triangle is half the area of the equilateral triangle described on the hypotenuse. 3

17. Two coins are tossed simultaneously find the probability of getting: 3

a. Two heads **b.** at least one head **c.** no head

18. Find the mode of the given data. 3

Marks obtained	25-35	35-45	45-55	55-65	65-75	75-85
No. of students	7	31	33	17	11	1

19. Prove: $(\text{cosec } A - \sin A)(\sec A - \cos A) = \dfrac{1}{\tan A + \cot A}$. **3**

Or

$(\sin A + \sec A)^2 + (\cos A + \text{cosec } A)^2 = (1 + \sec A \text{ cosec } A)^2$.

20. Find the number of terms of the A.P. 18, 15.5, 13, ... –49.5. **3**

SECTION-D

21. Solve for x and y: $\dfrac{57}{x+y} + \dfrac{6}{x-y} = 5$; $\dfrac{38}{x+y} + \dfrac{21}{x-y} = 9$ **4**

22. Prove that the ratio of areas of two similar triangles is equal to the ratio of the squares of their corresponding sides. **4**

23. The angles of depression of the top and bottom of a 12 m tall building from the top of a multistoried building are 30º and 60º respectively. Find the height of the multistoried building. **4**

24. Determine the ratio in which 2x + 3y – 30 = 0 divides the line segment A(3, 4) and B(7, 8) and find the coordinates of that point. **4**

25. Find the median using more than and less than ogive. **4**

Class	140–160	160–180	180–200	200–220	220–240
Frequency	15	29	8	12	14

36. In a flight of 600 km, a aircraft was slowed down due to bad weather. Its average speed for the trip was reduced by 200 km / hr and the time of flight increased by 30 minutes. Find the duration of flight. **4**