## AllCanMath

# **CLASS 10 MATH TEST PAPER 17**

## **Class 10 - Mathematics**

Time Al	llowed: 45 minutes	Maximum Mark	s: 25
		Section A	
1.	If $p^2 = \frac{32}{50}$ , then p is a/an		[1]
	a) irrational number	b) whole number	
	c) rational number	d) integer	
2.	What should be added to the polynomial $x^2$ - 5x	+ 4, so that 3 is the zero of the resulting polynomial?	[1]
	a) 4	b) 2	
	c) 5	d) 1	
3.	Graphically, the pair of equations $-6x - 2y = 21$	and $2x - 3y + 7 = 0$ represents two lines which are:	[1]
	a) parallel	b) coincident	
	c) intersecting exactly at one point	d) intersecting exactly at two points	
4.	If the equation $x^2 + 4x + k = 0$ has real and distinct roots, then		[1]
	a) k $\leq$ 4	b) k > 4	
	c) k $\geq$ 4	d) k < 4	
5.	If the sum of first n terms of an A.P. is $3n^2 + 4n$	and its common difference is 6, then its first term is:	[1]
	a) 6	b) 4	
	c) 3	d) 7	
6.	The line segments joining the midpoints of the sides of a triangle form four triangles, each of which is		[1]
	a) an isosceles triangle	b) an equilateral triangle	
	c) similar to the original triangle	d) congruent to the original triangle	
7.	XOYZ is a rectangle with vertices $X(-3, 0)$ , $O(0, 0)$ , $Y(0, 4)$ and $Z(x, y)$ . The length of its each diagonal is		[1]
	a) 4 units	b) $x^2 + y^2$ units	
	c) 5 units	d) X	
8.	If $\sinlpha=rac{\sqrt{3}}{2},\coseta=rac{\sqrt{3}}{2},$ then $tanlpha\cdot aneta$	is:	[1]
	a) 1	b) 0	
	c) $\sqrt{3}$	d) $\frac{1}{\sqrt{3}}$	
9.	In the given figure, tangents PA and PB drawn f	rom P to circle are inclined to each other at an angle of 80°. The	[1]

measure of  $\angle PAB$  is



#### 10. **Read the following text carefully and answer the questions that follow:**

Rainbow is an arch of colours that is visible in the sky after rain or when water droplets are present in the atmosphere. The colours of the rainbow are generally, red, orange, yellow, green, blue, indigo and violet. Each colour of the rainbow makes a parabola. We know that any quadratic polynomial  $p(x) = ax^2 + bx + c$  ( $a \neq 0$ ) represents a parabola on the graph paper.



- i. The graph of a rainbow y = f(x) is shown in the figure. Write the number of zeroes of the curve. (1)
- ii. If the graph of a rainbow does not intersect the x-axis but intersects y-axis at one point, then how many zeroes will it have? (1)
- iii. If a rainbow is represented by the quadratic polynomial p(x) = x<sup>2</sup> + (a + 1) x + b, whose zeroes are 2 and -3, find the value of a and b. (2)
  OR

The polynomial  $x^2 - 2x - (7p + 3)$  represents a rainbow. If -4 is a zero of it, find the value of p. (2)

#### 11. Read the following text carefully and answer the questions that follow:

Saving money is a good habit and it should be inculcated in children right from the beginning. Rehan's mother brought a piggy bank for Rehan and puts one  $\notin$  5 coin of her savings in the piggy bank on the first day. She increases his savings by one  $\notin$  5 coin daily.



Based on the above information, answer the following questions:

[4]

[4]

- i. How many coins were added to the piggy bank on 8<sup>th</sup> day?
- ii. How much money will be there in the piggy bank after 8 days?
- iii. a. If the piggy bank can hold one hundred twenty ₹ 5 coins in all find the number of days she can contribute to put ₹ 5 coins into it.

OR

b. Find the total money saved, when the piggy bank is full.

#### 12. Read the following text carefully and answer the questions that follow:

Ashok wanted to determine the height of a tree on the corner of his block. He knew that a certain fence by the tree was 4 feet tall. At 3 PM, he measured the shadow of the fence to be 2.5 feet tall. Then he measured the tree's shadow to be 11.3 feet.



i. What is the height of the tree? (1)

- ii. What will be length of shadow of tree at 12:00 pm? (1)
- iii. Write the name triangle formed for this situation. (2)

#### OR

What will be the length of wall at 12:00 pm? (2)

### 13. Read the following text carefully and answer the questions that follow:

Ryan, from a very young age, was fascinated by the twinkling of stars and the vastness of space. He always dreamt of becoming an astronaut one day. So he started to sketch his own rocket designs on the graph sheet. One such design is given below:



Based on the above, answer the following questions:

i. Find the mid-point of the segment joining F and G. (1)

[4]

[4]

ii. a. What is the distance between the points A and C? (2)

### OR

- b. Find the coordinates of the point which divides the line segment joining the points A and B in the ratio 1 : 3 internally. **(2)**
- iii. What are the coordinates of the point D? (1)

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