AllCanMath

CLASS 10 MATH TEST PAPER 27 (MCQ & 2 MARKER))

Class 10 - Mathematics

Time All	owed: 1 hour		Maximum Marks: 30
		Section A	
1.	The HCF of two numbers 65 and 104 is 13. If LCI	M of 65 and 104 is 40x, then the value of x	is: [1]
	a) 8	b) 5	
	c) 13	d) 40	
2.	The number of polynomials having zeroes -3 and	5 is:	[1]
	a) infinite	b) at most two	
	c) only one	d) exactly two	
3.	A quadratic polynomial whose product and sum of	f zeroes are $rac{1}{3}$ and $\sqrt{2}$ respectively is	[1]
	a) $_{3x^2}$ - $_x$ + $3\sqrt{2}x$	b) $3x^2 - 3\sqrt{2}x + 1$	
	c) $3x^2 + x - 3\sqrt{2}x$	d) $3x^2 + 3\sqrt{2}x + 1$	
4.	If (-3, 2) is a solution of the linear equation $5x + 3$	ky = 3, then the value of k is	[1]
	a) 5	b) 6	
	c) 2	d) 3	
5. If the roots of quadratic equation $4x^2 - 5x + k = 0$ are real and equal, then value of k is		are real and equal, then value of k is:	[1]
	a) $\frac{5}{4}$	b) $\frac{25}{16}$	
	c) $-\frac{25}{16}$	d) $-\frac{5}{4}$	
6.	Which of the following quadratic equations has -1 as a root?		[1]
	a) $x^2 - 4x - 5 = 0$	b) $_{-X}^2 - 4_X + 5 = 0$	
	c) $x^2 + 3x + 4 = 0$	d) $x^2 - 5x + 6 = 0$	
7.	n th term of an A.P. is 7n + 4. The common difference is:		[1]
	a) 4	b) 7	
	c) 7n	d) 1	
8.	If $\triangle ABC \sim \triangle DEF$ and $\angle A = 47^{\circ}$, $\angle E = 83^{\circ}$, then $\angle C$ is equal:		[1]
	a) 50°	b) ₁₃₀ °	
	c) ₈₃₀	d) _{47°}	
9.	If the distance between the points $(3, -5)$ and $(x, -5)$ is 15 units, then the values of x are:		[1]
	a) -9, -12	b) 12, -18	
	c) 18, 5	d) -12, 18	

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10.	Point $P\left(rac{a}{8},4 ight)$ is the mid-point of the line segment	t joining the points A(- 5, 2) and B(4, 6). The value of a is:	[1]	
	a) -4	b) 4		
	c) -8	d) -2		
11.	If $x = a \cos\theta$ and $y = b \sin\theta$, then the value of $b^2 x^2$.	$+ a^2y^2$ is:	[1]	
	a) a ⁴ b ⁴	b) _{a²b²}		
	c) $a^2 + b^2$	d) ab		
12.	If $\sqrt{3} \tan 2 heta - 3 = 0$ then $ heta$ = ?		[1]	
	a) 300	b) 60°		
	c) ₁₅ 0	d) 45°		
13.	Pankaj has a motorcycle with wheels of diameter 91 between two adjoining spokes.	cm. There are 22 spokes in the wheel. Find the length of arc	[1]	
	a) 13 cm	b) 26 cm		
	c) 15 cm	d) 18 cm		
14.	A solid spherical ball fits exactly inside the cubical	box of side 2a. The volume of the ball is	[1]	
	a) $\frac{1}{6}\pi a^3$	b) $\frac{4}{3}\pi a^{3}$		
	c) $\frac{16}{3}\pi a^3$	d) $\frac{32}{3}\pi a^3$		
15.	For some data x_1 , x_2 , x_n with respective frequence	ies $\mathrm{f}_1,\mathrm{f}_2,\mathrm{f}_{\mathrm{n}},$ the value of $\sum\limits_1^n f_i\left(x_i-ar{x} ight)$ is equal to:	[1]	
	a) $nar{x}$	b) 1		
	c) $\sum f_i$	d) 0		
16.	A card is drawn at random from a well shuffled decisis	k of 52 playing cards. The probability of getting a face card	[1]	
	a) $\frac{3}{13}$	b) $\frac{1}{13}$		
	c) $\frac{1}{2}$	d) $\frac{4}{13}$		
17.	The probability that a non-leap year has 53 Sundays, is		[1]	
	a) $\frac{1}{7}$	b) $\frac{2}{7}$		
	c) $\frac{6}{7}$	d) $\frac{5}{7}$		
18.	If angle between two radii of a circle is 130° , the angle between tangents at ends of radii is :			
	a) 70°	b) 90°		
	c) 60°	d) 50°		
19.	Assertion (A): The HCF of two numbers is 18 and their product is 3072. Then their LCM = 169.			
	Reason (R): If a, b are two positive integers, then HCF \times LCM = a \times b.			
	a) Both A and R are true and R is the correct explanation of A.	b) Both A and R are true but R is not the correct explanation of A.		
	c) A is true but R is false.	d) A is false but R is true.		

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- 20. Assertion (A): In a circle of radius 6 cm, the angle of a sector 60°. Then the area of the sector is $18\frac{6}{7}cm^2$. [1] **Reason (R):** Area of the circle with radius r is πr^2 .
 - a) Both A and R are true and R is the correct explanation of A.
- b) Both A and R are true but R is not the correct explanation of A.

d) A is false but R is true.

- c) A is true but R is false.
- Section B
- 21. Find the HCF and LCM of 108, 120 and 252 using prime factorisation method.

OR

Find the largest number which divides 438 and 606 leaving remainder 6 in each case.

22. The line AB intersects x-axis at A and y-axis at B. The point P(2, -3) lies on AB such that AP : PB = 3 : 1. Find [2] the co-ordinates of A and B.



- 23. Prove that $\frac{\sin \theta 2 \sin^3 \theta}{2 \cos^3 \theta \cos \theta} = \tan \theta$.
- 24. A missing helicopter is reported to have somewhere in a rectangular park having area of 700 sq km. What is the **[2]** probability that it has crashed inside a circular lake of radius 10 km inside the park?

OR

Two different dice are tossed together. Find the probability that

- i. the number on each die is even,
- ii. the sum of the numbers appearing on the two dice is 5.
- 25. In Figure, PA and PB are tangents to the circle with centre at O. If $\angle APB = 70^{\circ}$, then find m $\angle AQB$.



[2]

[2]

[2]