PQS-02

PRACTICE QUESTIONS SHEET FOR MATHS CLASS 10

A Compilation By

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01. If two positive integers a and b are written as $a = x^3y^2$ and $b = xy^3$, where x, y are prime numbers, then HCF (a, b) is

(a) xy (b) xy^2 (c) x^3y (d) x^2y^2

02. One equation of a pair of dependent lines is $-5x + 7y = 2$, the second equation can be

(a) $10x + 14y + 4 = 0$ (b) $-10x + 14y + 4 = 0$

(c) $-10x + 14y + 4 = 0$ (d) $10x - 14y = -4$

03. If the zeroes of the quadratic polynomial $ax^2 + bx + c;\ c \neq 0$ are equal, then

(a) c and a have opposite signs (b) c and b have opposite signs

(c) c and a have the same sign (d) c and b have the same sign

04. The zeroes of the quadratic polynomial $x^2 + 99x + 127$ are

(a) both positive (b) both negative

(c) one positive one negative (d) both equal

05. The number of polynomials having zeroes and -2 and 5 is

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

06. The product of the HCF and LCM of the smallest prime number and smallest composite number is

(a) 2 (b) 4 (c) 6 (d) 8

07. $\left(2+\sqrt{5}\right)\left(2-\sqrt{5}\right)$ is

(a) a rational number (b) a whole number

(c) a positive integer (d) All of the above

08. If $x = 3\sec^2\theta - 1,\ y = \tan^2\theta - 2$, then $x - 3y$ is

(a) 3 (b) 4 (c) 8 (d) 5

09. If $\operatorname{cosec}\theta - \cot\theta = \frac{1}{3}$, then the value of $\operatorname{cosec}\theta + \cot\theta$ is

(a) 1 (b) 2 (c) 3 (d) 4

10. In ΔPQR is right angled at R, then the value of $\cos(P+Q)$ is

(a) 1 (b) 0 (c) $\frac{1}{2}$ (d) $\frac{\sqrt{3}}{2}$

11. The lengths of the diagonals of a rhombus are 24 cm and 32 cm. The perimeter of the rhombus is

(a) 9 cm (b) 128 cm (c) 80 cm (d) 156 cm

12. The square of the distance between (0, 0) and (–x, –y) is given by

(a) $\sqrt{x^2+y^2}$ (b) x^2+y^2 (c) $\pm\sqrt{x^2+y^2}$ (d) $\pm(x^2+y^2)$

13. If $P(\text{not } E)=1$, then $P(E)=$

(a) 1 (b) 0 (c) –1 (d) Can not be obtained

14. If $\sin A=\frac{4}{5}$, then $\tan A=$

(a) $\frac{4}{3}$ (b) $\frac{3}{4}$ (c) $\frac{3}{5}$ (d) $\frac{4}{5}$

15. Three unbiased coins are tossed. The probability of getting at most two heads is

(a) $\frac{3}{8}$ (b) $\frac{1}{2}$ (c) $\frac{7}{8}$ (d) 1

16. A bag contains card numbered from 1 to 25. One card is drawn at random from the bag. What is the probability of getting a card has a number which is divisible by both 2 and 3?

(a) $\frac{3}{25}$ (b) $\frac{6}{25}$ (c) $\frac{4}{25}$ (d) $\frac{1}{5}$

17. If the point $P(2,1)$ lies on the line segment joining points $A(4,2)$ and $B(8,4)$, then

(a) $AP=\frac{1}{3}AB$ (b) $AP=PB$ (c) $PB=\frac{1}{3}AB$ (d) $AP=\frac{1}{2}AB$

18. The perpendicular bisector of the line segment joining the points $A(2,5)$ and $B(4,-5)$ meets AB at P. Then coordinates of P is

(a) (0, 13) (b) (0, –13) (c) (0, 12) (d) (3, 0)

19. If the perimeter of a circle is equal to that of a square, then the ratio of their areas is

(a) $\frac{22}{7}$ (b) $\frac{14}{11}$ (c) $\frac{7}{22}$ (d) $\frac{11}{14}$

20. The radius of a circle whose circumference is equal to the sum of the circumference of the two circles of diameter 36 cm and 20 cm, is

(a) 56 cm (b) 42 cm (c) 28 cm (d) 16 cm

21. Two dice are thrown at the same time. The probability that the difference of the numbers on the two dice is 2, will be

(a) $\frac{1}{9}$ (b) $\frac{2}{9}$ (c) $\frac{1}{3}$ (d) $\frac{4}{5}$

22. A city school has five houses A, B, C, D and E. A class has 23 students, 4 from house A, 8 from house B, 5 from house C, 2 from D and rest from E. A single student is selected at random for head boy. The probability that the selected student is not from A, B, C is

(a) $\frac{4}{23}$ (b) $\frac{6}{23}$ (c) $\frac{8}{23}$ (d) $\frac{17}{23}$

23. Area of a semi-circle (with radius of 1 unit) is

(a) $\frac{22}{7}$ sq.units (b) $\frac{11}{7}$ sq.units (c) 3.14 sq.units (d) 6.28 sq.units

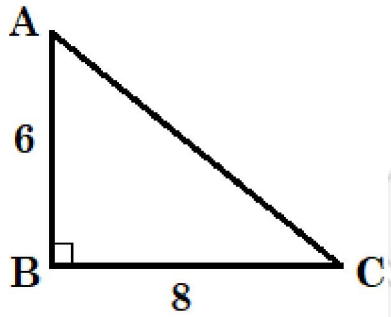
24. A piece of wire 20 cm long is bent into the form an arc of a circle, subtending an angle of $60°$ at the centre. The radius of the circle is equal to

(a) $\frac{50}{\pi}$ cm (b) $\frac{60}{\pi}$ cm (c) 30 cm (d) π cm

25. The difference of the areas of a sector of an angle $120°$ and its corresponding major sector of a circle of radius 21 cm is

(a) 382 cm^2 (b) 462 m^2 (c) 462 cm^2 (d) 924 cm^2

26. From the figure, the value of $\sin A + \cot A$ is



(a) $\frac{29}{15}$ (b) $\frac{19}{15}$ (c) $\frac{9}{15}$ (d) $\frac{29}{51}$

27. If $\text{cosec}^2\theta(1+\cos\theta)(1-\cos\theta)=\lambda$, then the value of λ is

(a) 0 (b) $\cos^2\theta$ (c) 1 (d) -1

28. If $\sqrt{2}\sin(60°-\alpha)=1$, then the value of α is

(a) $45°$ (b) $15°$ (c) $60°$ (d) $130°$

29. If n is any natural number, then which of the following expression ends with 0?

(a) $(3\times2)^n$ (b) $(4\times3)^n$ (c) $(2\times5)^n$ (d) $(6\times2)^n$

30. n^2-1 is divisible by 8, if n is

(a) an integer (b) a natural number (c) an odd number (d) an even integer

31. The points $(-4, 0)$, $(4, 0)$ and $(0, 3)$ are the vertices of a/an

(a) right triangle (b) isosceles triangle
(c) equilateral triangle (d) scalene triangle

32. The fourth vertex D of a parallelogram ABCD whose three vertices are A$(-2, 3)$, B$(6, 7)$ and C$(8, 3)$ is

(a) $(0, 1)$ (b) $(0, -1)$ (c) $(-1, 0)$ (d) $(1, 0)$

33. The distance between the points P$(-6, 8)$ from the origin is

(a) 8 (b) $2\sqrt{7}$ (c) 10 (d) 6

34. A line intersects the y-axis and x-axis at the points P and Q, respectively. If $(2, -5)$ is the mid-point of PQ, then the coordinates of P and Q, are respectively

(a) $(0, -5)$ and $(2, 0)$ (b) $(0, 10)$ and $(-4, 0)$
(c) $(0, 4)$ and $(-10, 0)$ (d) $(0, -10)$ and $(4, 0)$

35. The point which divides the line segment joining the points $(7, -6)$ and $(3, 4)$ in the ratio $1:2$ internally lies in the

(a) I quadrant (b) II quadrant (c) III quadrant (d) IV quadrant

36. The number of solutions of $3^{x+y}=243$ and $243^{x-y}=3$ is

(a) 0 (b) 1 (c) 2 (d) infinite

37. If θ is the angle (in degrees) of a sector of a circle of radius r, then area of sector is

(a) $\frac{\pi r^2\theta}{360°}$ (b) $\frac{\pi r^2\theta}{180°}$ (c) $\frac{2\pi r^2\theta}{360°}$ (d) $\frac{2\pi r\theta}{180°}$

38. The ratio in which the line segment joining $(-3, 10)$ and $(6, -8)$ is divided by $(-1, 6)$, is

(a) $7:2$ (b) $2:7$ (c) $1:1$ (d) $3:7$

39. If one root of the polynomial $P(y) = 5y^2 + 13y + m$ is reciprocal of the other, then the value of m is

(a) 6 (b) 0 (c) 5 (d) –5

40. The value of $\frac{\tan^2 60° - \sin^2 30°}{\tan^2 45° + \cos^2 30°}$ is

(a) $\frac{7}{11}$ (b) $\frac{11}{13}$ (c) $\frac{13}{11}$ (d) $\frac{11}{7}$

💻 ANSWER KEY

01.	(b)	**02.**	(d)	**03.**	(c)	**04.**	(b)	**05.**	(d)	**06.**	(d)
07.	(d)	**08.**	(c)	**09.**	(c)	**10.**	(b)	**11.**	(c)	**12.**	(b)
13.	(b)	**14.**	(a)	**15.**	(c)	**16.**	(c)	**17.**	(d)	**18.**	(d)
19.	(b)	**20.**	(c)	**21.**	(b)	**22.**	(b)	**23.**	(b)	**24.**	(b)
25.	(c)	**26.**	(a)	**27.**	(c)	**28.**	(b)	**29.**	(c)	**30.**	(c)
31.	(b)	**32.**	(b)	**33.**	(c)	**34.**	(d)	**35.**	(d)	**36.**	(b)
37.	(a)	**38.**	(b)	**39.**	(c)	**40.**	(d)				