

JAIPUR EDUCATION PLUS

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Sample Paper-3

(Pattern of Secondary Education Board)

SECTION-A

- Q.1 Use Euclid's division algorithm to find the highest common factor (HCF) of 135 and 225.
[Ans. HCF = 45]
- Q.2 Total price of 5 oranges and 3 apples is Rs. 35. Write it down in the algebraic form.
[Ans. 35]
- Q.3 From your pocket money, you save Rs. 1 on day, Rs. 2 on day, Rs. 3 on day and so on. How much money will you save in the month of march. 2013?
[Ans. 496]
- Q.4 Write the coordinates of the point which divides the line segment joining the points $(-4, 4)$ and $(7, 2)$ in $4 : 7$ internally.
[Ans. $\left(0, \frac{36}{11}\right)$]
- Q.5 Find the mid point of the join of A $(-2, 3)$ and B $(8, -9)$.
[Ans. 3, -3]
- Q.6 The length of a tangent from a point A at distance 5 cm from the centre of the circle is 4 cm. Find the radius of the circle.
[Ans. 3 cm]
- Q.7 Find the circumference of a circle of diameter 21 cm.
[Ans. 66 cm]
- Q.8 Divide a line segment of length 9.6 cm in the ratio $5 : 3$ (Draw figure only)
- Q.9 Write the arc of the major segment of a angle θ° of a circle with radius(r).
- Q.10 In a lottery, there are 25 blank and 10 prizes. What is the probability of getting prizes?
[Ans. $\frac{2}{7}$]
- Q.11 The area of two similar triangles $\triangle ABC$ and $\triangle PQR$ are 25 cm^2 and 49 cm^2 respectively. If $QR = 9.8 \text{ cm}$. Find BC.
[Ans. BC = 7 cm.]
- Q.12 If $15 \cot A = 8$, then find $\sin A$ and $\sec A$.
[Ans. $\sin A = \frac{15}{17}$, $\sec A = \frac{17}{8}$]
- Q.13 Find the value of $\frac{\cos 45^\circ}{\sec 30^\circ + \operatorname{cosec} 30^\circ}$.
[Ans. $\frac{3\sqrt{2} - \sqrt{6}}{8}$]
- Q.14 Find the value of $\tan 48^\circ \tan 23^\circ \tan 42^\circ \tan 67^\circ$.
[Ans. 1]

- Q.15 Metallic spheres of radii 6 cm, 8 cm and 10 cm respectively, are melted to form a single solid state. Find the radius of the resulting sphere. [Ans. 12]

SECTION-C

- Q.16 Prove that $3 + 2\sqrt{5}$ is irrational.
- Q.17 On dividing polynomial $x^4 - 5x + 6$ by a polynomial function $g(x)$, the quotient and remainder were $-(x^2 + 2)$ and $10 - 5x$ respectively then find the function $g(x)$.
[Ans. $g(x) = 2 - x^2$]
- Q.18 If the sum of the first 14 terms of an A.P. is 1050 and its first term is 10, find the 20th term.
[Ans. 20th term = 140]
- Q.19 Prove that $\sin^2 30^\circ + \sin^2 45^\circ + \sin^2 60^\circ = \frac{3}{2}$.
- Q.20 A 7 m long flagstaff is fixed on the top of a tower on the horizontal plane. From a point on the ground, the angles of elevation of the top and bottom of the flag staff are 60° and 45° respectively. Find the height of the tower correct to one place of decimal.
[Ans. 9.6 m]
- Q.21 Prove that the parallelogram circumscribing a circle is rhombus.
- Q.22 Draw a triangle ABC with side $BC = 7$ cm $\angle B = 45^\circ$, $\angle A = 105^\circ$, then construct a triangle whose side are $\frac{4}{3}$ times the corresponding side of $\triangle ABC$.
- Q.23 A chord AB of a circle of radius 10 cm makes a right angle at the centre of the circle. Find the arc of the major and minor segments (use $\pi = 3.14$). [Ans. 285.5 cm^2]
- Q.24 A drinking glass is in the shape of a frustum of a cone of height 14 cm. The diameters of its two circular ends are 4 cm and 2 cm. Find the capacity of the glass. [Ans. $102\frac{2}{3} \text{ cm}^3$]
- Q.25 Cards marked with the numbers 2 to 101 are placed in a box and mixed thoroughly. One card is drawn from this box. Find the probability that the number of the card is:

(i) an even number [Ans. $\frac{1}{2}$]

(ii) a number less than 14 [Ans. $\frac{3}{25}$]

(iii) a number which is perfect square [Ans. $\frac{9}{100}$]

SECTION-D

- Q.26 The coach of a cricket team buys 3 bats and 6 balls for Rs. 3900. Later, she buys another bat and 3 more balls of the same kind for Rs. 1300. Represent this situation algebraically and geometrically. [Ans. $x = 1300, y = 0$]

- Q.27 The sum of the ages of two sports personalities is 45 years. 4 years ago the product of their ages in years was 560. Is this situation possible. If so, find their present ages.

Write the contribution of sports in ones life.

- Q.28 PQR is triangle right angle at P and M is a point on QR such that $QM \cdot MR = PM^2$. Show that $PM^2 = OM \cdot MR$

OR

- Q.28 In a equilateral triangle ABC, D is a point on side BC such that $BD = \frac{1}{3} BC$. Prove that $9AD^2 = 7AB^2$.

- Q.29 You have studied in class IX, that a median of a triangle divides it into two triangles of equal area. Verify this result for $\triangle ABC$ whose vertices are A(4, -6), B(3, -2) and C(5, 2).

- Q.30 The medium of the following data in 525. Find the value of x and y. If the total frequency 100.

Class Interval	0-100	100-200	200-300	300-400	400-500	500-600	600-700	700-800	800-900	900-1000
Frequency	2	5	x	12	17	20	y	9	7	4

[Ans. x = 9 and y = 15]

OR

- Q.30 The given distribution shows the number of runs scored by some top batsmen of the world in one-day international cricket matches.

Runs scored	3000-4000	4000-5000	5000-6000	6000-7000	7000-8000	8000-9000	9000-10000	10000-11000
Number of batsman	4	18	9	7	6	3	1	1