Directorate of Education, GNCT of Delhi

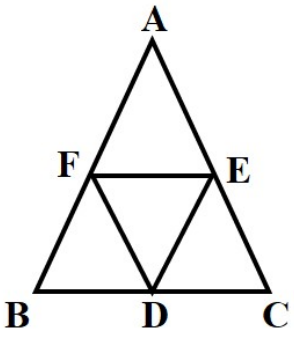
Marking Scheme of Practice Paper – II

Class – IX

Mathematics (Code: 041)

Maximum Marks: 40 **Time Duration: 90 minutes**

Q. No.	Correct option	Hint/ Solution
1.	**(b)**	In between two rational numbers there are Infinitely many rational numbers.
2.	**(d)**	$x^{\frac{2}{4}} \times x^{\frac{6}{4}} = x^{\frac{2}{4}+\frac{6}{4}} = x^{\frac{8}{4}} = x^2$
3.	**(a)**	If x = a, then y = 3a. Therefore, required point is (a, 3a).
4.	**(c)**	(abscissa of P) – (abscissa of Q) = 2 – (– 6) = 2 + 6 = 8
5.	**(c)**	In third quadrant, both the coordinates of a point are negative.
6.	**(d)**	Parallel lines cannot intersect each other.
7.	**(c)**	0.4014001400014….. is non terminating and non-recurring decimal number.
8.	**(d)**	Two angles whose sum is equal to 180° are called Supplementary angle.
9.	**(c)**	Infinitely many of linear equations may be satisfied by x = 1 and y = 2 **.**
10.	**(c)**	$\Delta CAB \cong \Delta RQP$
11.	**(c)**	$s = \frac{20+15+9}{2}$ = 22 cm
12.	**(c)**	$s = \frac{13+13+24}{2}$ = 25 cm $A = \sqrt{25\,(25-13)(25-13)(25-24)}$ = 60 cm^2
13.	**(b)**	AB = AC ⇒ ∠C =∠B ∴ ∠C = 50^0
14.	**(b)**	Let supplementary angles be x and x – 40^0. A.T.Q. x + (x – 40^0) = 180^0 x = 110^0 so, angles are 110^0 and 70^0.
15.	**(c)**	10 – 15, 15 – 20, 20 – 25, 25 – 30, 30 – 35 So, lower class-limit of the highest class is 30.
16.	**(b)**	s = 54 cm $A = \sqrt{54\,(54-51)(54-37)(54-20)}$ = 306 cm^2 Cost of levelling = 306 X 3 = ₹ 918
17.	**(c)**	If one angle of a linear pair is acute then the other angle will be obtuse angle.
18.	**(a)**	∠R = ∠P ⇒ PQ = QR ∴ PQ = 4 cm
19.	**(d)**	If the sides of a triangle are doubled, then its area becomes four times.
20.	**(a)**	There is no data in class 370 – 390, so frequency of 370 – 390 is 0.
21.	**(d)**	The point which lies on y-axis at a distance of 10 units in the negative direction of y-axis is (0, –10).
22.	**(a)**	60^0 + x = 180^0 (Linear Pair) ∴ x = 120^0 120^0 + y = 180^0 (Linear Pair) ∴ y = 60^0

23.	**(c)**	$x + y = 0$ satisfied the solution (0,0).
24.	**(a)**	$5y^0 + 7y^0 = 180^0$ (Linear Pair) $y^0 = 15^0$ $x^0 + 3y^0 = 7y^0$ (Exterior angle Property of a triangle) $\Rightarrow x^0 = 4y^0$ $\therefore x = 60$
25.	**(a)**	$3x + 4x + 3x = 180^0$ (Straight angle) $x = 18^0$ $\therefore 4x = 4 \text{ X } 18^0 = 72^0$
26.	**(c)**	$(0) + 2y = 2 \Rightarrow y = 1$ $\therefore$ required point is (0, 1).
27.	**(b)**	Coordinate axes intersect each other at right angle.
28.	**(a)**	$A = \frac{1}{2} \text{ X } 12 \text{ X } 8 = 48 \text{ cm}^2$
29.	**(d)**	$0 .x + 1 .y = 5$
30.	**(b)**	$y + 25^0 = 60^0$ $\therefore y = 35^0$
31.	**(d)**	The collection of information, collected for a purpose is called data.
32.	**(b)**	If the altitudes from two vertices of a triangle to the opposite sides are equal, then the triangle is isosceles.
33.	**(b)**	The graph of $x = 5$ is a line parallel to y-axis at a distance 5 units from the origin.
34.	**(d)**	Let sides of triangles be 3x, 4x and 5x. $S = 6x$ Area $= \sqrt{6x\,(6x-3x)(6x-4x)(6x-5x)}$ $150 = 6x^2$ $\therefore x = 5$ cm Perimeter = 12 X 5 = 60 cm
35.	**(a)**	$E \leftrightarrow P$ $\therefore \angle E = \angle P$
36.	**(d)**	 By mid-point theorem, FE = ½ BC and FE ∥ BC ⇒ FE = DC=BD DE = ½ AB and DE ∥ AB ⇒ DE = AF=BF FD = ½ AC and FD ∥ AC ⇒ FD = AE = EC $\therefore \Delta DEF \cong \Delta AFE \cong \Delta BFD \cong \Delta CDE$
37.	**(d)**	Side of equilateral triangle is 20 m. Area $= \frac{\sqrt{3}}{4} \text{ X } (20)^2 = 100\sqrt{3} \text{ m}^2$

38.	**(a)**	Let the base of triangle be x cm. S = (5 + $\frac{x}{2}$) cm A.T.Q. $\sqrt{(5+\frac{x}{2})(\frac{x}{2})(\frac{x}{2})(5-\frac{x}{2})}$ = 12 Squaring both sides, we have $\frac{x^2}{4}$ $(25 - \frac{x^2}{4})$ = 144 Let $\frac{x^2}{4}$ = y ∴ y (25 – y) = 144 Either y = 16 or y = 9 Either x = 8 or x = 6 So, base of triangle is 6 cm.
39.	**(c)**	The graph of y = 7 is a straight line parallel to x-axis.
40.	**(b)**	The perpendicular distance (in units) of the point (-7, 2) from y-axis is 7 units.
41.	**(b)**	$\sqrt{10}$ is an irrational number.
42.	**(d)**	4 + 5 $\sqrt{36}$ = 4 + 5X6 = 34
43.	**(d)**	$\frac{1}{\sqrt{3}}$ is an irrational number.
44.	**(b)**	For non-terminating recurring decimals, at least one of factors of denominator must be other than 2 and 5.
45.	**(a)**	$(256)^{0.16} \times (256)^{0.09} = (256)^{0.16+0.09} = (256)^{0.25} = 4$
46.	**(b)**	$\frac{1600}{500}$ X 100 = 320%
47.	**(d)**	1600 + 1400 + 1300 + 1200 + 1100 + 1000 + 500 = 8100
48.	**(a)**	Difference of number of people in age groups 50 – 60 & 60 – 70 is 500. Difference of number of people in age groups 0 – 10 & 10 – 20 is 200. ∴ two consecutive age groups having maximum difference of number of people is 50 – 60 & 60 – 70.
49.	**(b)**	1400 + 1000 = 2400
50.	**(a)**	0 – 10, 10 – 20, 20 – 30 and 30 – 40 have more than 1100 healthy people.