

135

GYAN BHARATI SCHOOL
Periodic Test 1 (2017 – 18)

Class – S1

Subject – Mathematics

Time Allowed – 1:30 Hour

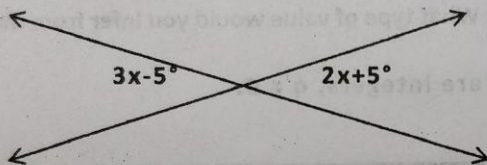
MM – 40

General Instructions:

- (i) There are three printed pages in this question paper.
- (ii) There are 15 questions in this question paper and all questions are compulsory.
- (iii) Marks for questions are indicated against each section.
- (iv) Calculators are not allowed. However you may ask for log tables, if required.
- (v) There is no overall choice.

SECTION A (1 MARK QUESTIONS)

Q1 In the adjoining fig. find the value of x .



Q2 write the coordinates of the points which lie on x-axis and are at a distance of 5 units from the y-axis.

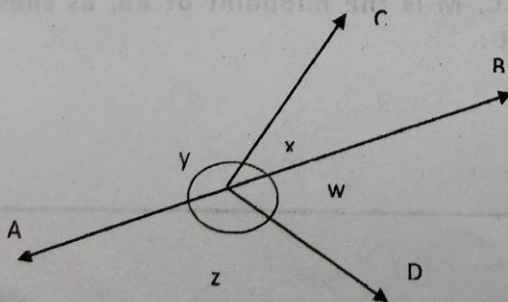
Q3 The decimal expansion of Irrational numbers are _____.

SECTION B (2 MARK QUESTIONS)

Q4 Factorize: $27x^3 - \frac{1}{216} - \frac{9}{2}x^2 + \frac{1}{4}x$

Q5 Represent $\sqrt{5}$ on number line.

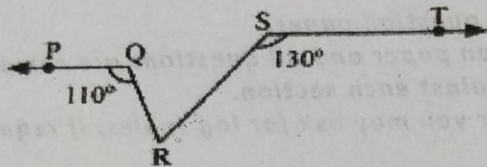
Q6 In fig. , if $x + y = w + z$, then prove that AOB is a line.



SECTION C (3 MARK QUESTIONS)

Q7 If $x = 5 - 2\sqrt{6}$, find the value of $x^2 + \frac{1}{x^2}$.

Q8 In fig. if $PQ \parallel ST$, $\angle PQR = 110^\circ$ and $\angle RST = 130^\circ$, find $\angle QRS$.



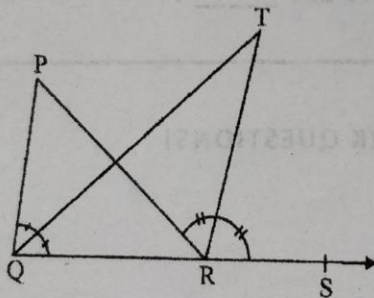
Q9 If $\frac{\sqrt{2} + \sqrt{3}}{3\sqrt{2} - 2\sqrt{3}} = a - b\sqrt{6}$, find a and b.

Q10 Three students were made to stand on the points P, Q and S with coordinates (3, 2), (-4, 2) and (-4, 5) respectively in a playground to play a game. Plot these points and find the coordinates of the fourth point R so that PQRS form a rectangle. What type of value would you infer from the question?

Q11 Express $2.\overline{357}$ in the form $\frac{p}{q}$ where p, q are integers, $q \neq 0$.

SECTION D (4 MARK QUESTIONS)

Q12 In fig. the side QR of ΔPQR is extended to a point S. If the bisector of $\angle PQR$ and $\angle PRS$ meet at a point T, then prove that $\angle QTR = \frac{1}{2} \angle QPR$.

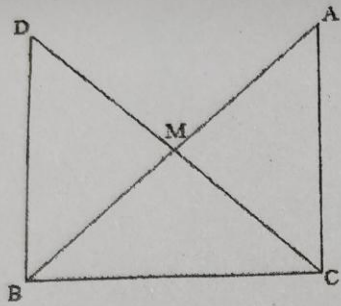


Q13 Using factor theorem, factorize the polynomial $2x^4 + x^3 - 14x^2 - 19x - 6$.

Q14 In right triangle ABC, right angled at C, M is the midpoint of AB, as shown in the following figure. If $DM = CM$. Show that :

a) $\Delta AMC \cong \Delta BMD$

b) $CM = \frac{1}{2} AB$



5 Polynomial $p(x)$: $6x^3 + 2x^2 - ax + b$, when divided by $(x+1)$ leaves remainder 14 and $(x-1)$ is a factor of $p(x)$. Find a and b .