Board Paper of Class 10 Maths (Basic) Term-I 2021 Delhi(Set 4)

Total Time: 90

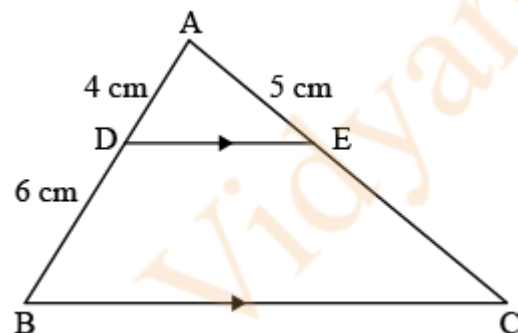**Total Marks: 40.0**

Section A

Q.No.1: HCF of 92 and 152 is
(a) 4
(b) 19
(c) 23
(d) 57   **Marks:[1.00]**

Q.No.2: In $\triangle$ABC, DE || BC, AD = 4 cm, DB = 6 cm and AE = 5 cm. The length of EC is

(a) 7 cm
(b) 6.5 cm
(c) 7.5 cm
(d) 8 cm   **Marks:[1.00]**

Q.No.3: The value of k, for which the pair of linear equations $x + y - 4 = 0$, $2x + ky - 3 = 0$ have no solution, is
(a) 0
(b) 2

(c) 6

(d) 8 **Marks:[1.00]**

Q.No.4: The value of $(\tan^2 45° - \cos^2 60°)$ is

(a) $\frac{1}{2}$

(b) $\frac{1}{4}$

(c) $\frac{3}{2}$

(d) $\frac{3}{4}$ **Marks:[1.00]**

Q.No.5: A point $(x, 1)$ is equidistant from $(0, 0)$ and $(2, 0)$. The value of x is
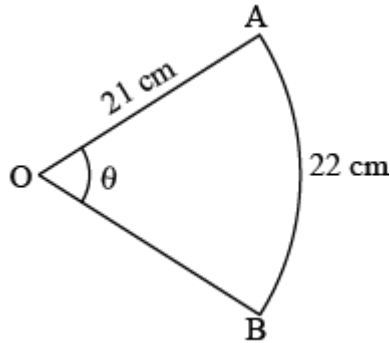
(a) 1

(b) 0

(c) 2

(d) $\frac{1}{2}$ **Marks:[1.00]**

Q.No.6: Two coins are tossed together. The probability of getting exactly one head is

(a) $\frac{1}{4}$

(b) $\frac{1}{2}$

(c) $\frac{3}{4}$

(d) 1 **Marks:[1.00]**

Q.No.7: A circular arc of length 22 cm subtends an angle θ at the centre of the circle of radius 21 cm. The value of θ is

(a) 90°
(b) 50°
(c) 60°
(d) 30° **Marks:[1.00]**

Q.No.8: A quadratic polynomial having sum and product of its zeroes as 5 and 0 respectively, is
(a) $x^2 + 5x$
(b) $2x(x-5)$
(c) $5x^2 - 1$
(d) $x^2 - 5x + 5$ **Marks:[1.00]**

Q.No.9: If P(E) = 0.65, then the value of P(not E) is
(a) 1.65
(b) 0.25
(c) 0.65
(d) 0.35 **Marks:[1.00]**

Q.No.10: It is given that ΔDEF ~ ΔPQR. EF : QR = 3 : 2, then value of ar(DEF) : ar(PQR) is
(a) 4 : 9
(b) 4 : 3
(c) 9 : 2
(d) 9 : 4 **Marks:[1.00]**

Q.No.11: Zeroes of a quadratic polynomial $x^2 - 5x + 6$ are
(a) −5, 1

(b) 5, 1
(c) 2, 3
(d) −2, −3   **Marks:[1.00]**

Q.No.12: $\frac{57}{300}$ is a
(a) non-terminating and non-repeating decimal expansion.
(b) terminating decimal expansion after 2 places of decimals.
(c) terminating decimal expansion after 3 places of decimals.
(d) non-terminating but repeated decimal expansion.   **Marks:[1.00]**

Q.No.13: Perimeter of a rectangle whose length (*l*) is 4 cm more than twice its breadth (*b*) is 14 cm. The pair of linear equations representing the above information is
(a)
$$l + 4 = 2b$$
$$2(l + b) = 14$$

(b)
$$l - b = 4$$
$$2(l + b) = 14$$

(c)
$$l = 2b + 4$$
$$l + b = 14$$

(d)
$$l = 2b + 4$$
$$2(l + b) = 14$$

Marks:[1.00]

Q.No.14: $5.\overline{213}$ can also be written as
(a) 5.213213213...
(b) 5.2131313...
(c) 5.213
(d) $\frac{5213}{1000}$

Marks:[1.00]

Q.No.15: The ratio in which the point (4, 0) divides the line segment joining

the points (4, 6) and (4, −8) is
(a) 1 : 2
(b) 3 : 4
(c) 4 : 3
(d) 1 : 1 **Marks:[1.00]**
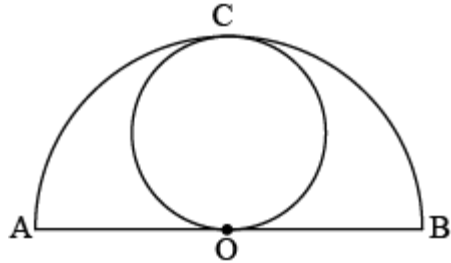

Q.No.16: Which of the following is not defined?
(a) sec 0°
(b) cosec 90°
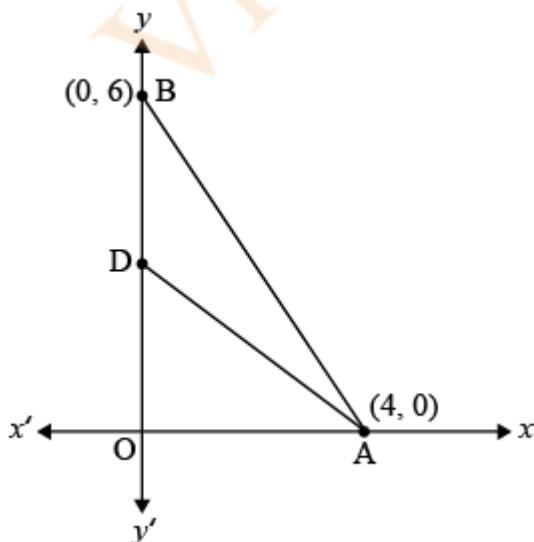(c) tan 90°
(d) cot 90° **Marks:[1.00]**

Q.No.17: In the given figure, a circle is touching a semi-circle at C and its diameter AB at O. If AB = 28 cm, what is the radius of the inner circle?

(a) 14 cm
(b) 28 cm
(c) 7 cm
(d) $\frac{7}{2}$ cm **Marks:[1.00]**

Q.No.18: The vertices of a triangle OAB are O(0, 0), A(4, 0) and B(0, 6). The median AD is drawn on OB. The length AD is

(a) $\sqrt{52}$ units
(b) 5 units
(c) 25 units
(d) 10 units   **Marks:[1.00]**

Q.No.19: In a right-angled triangle PQR, ∠Q = 90°. If ∠P = 45°, then value of tanP − cos²R is
(a) 0
(b) 1
(c) $\frac{1}{2}$
(d) $\frac{3}{2}$ **Marks:[1.00]**

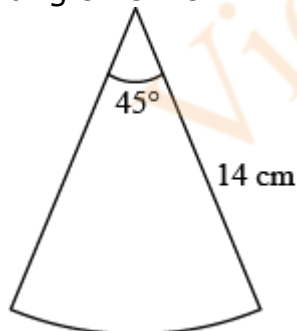**Q.No.20:** If tanθ = $\frac{2}{3}$, then the value of secθ is

(a) $\frac{\sqrt{13}}{3}$

(b) $\frac{\sqrt{5}}{3}$

(c) $\sqrt{\frac{13}{3}}$

(d) $\frac{3}{\sqrt{13}}$ **Marks:[1.00]**

Section B

Q.No.21: The perimeter of the sector of a circle of radius 14 cm and central angle 45° is

(a) 11 cm
(b) 22 cm
(c) 28 cm
(d) 39 cm   **Marks:[1.00]**

Q.No.22: A bag contains 16 red balls, 8 green balls and 6 blue balls. One ball is drawn at random. The probability that it is blue ball is
(a) $\frac{1}{6}$
(b) $\frac{1}{5}$
(c) $\frac{1}{30}$
(d) $\frac{5}{6}$

Marks:[1.00]

Q.No.23: If $\sin\theta - \cos\theta = 0$, then the value of θ is
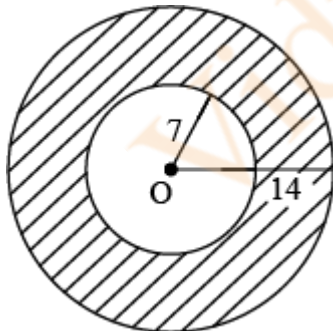(a) 30°
(b) 45°
(c) 90°
(d) 0°

Marks:[1.00]

Q.No.24: The probability of happening of an event is 0.02. The probability of not happening of the event is
(a) 0.02
(b) 0.80
(c) 0.98
(d) $\frac{49}{100}$

Marks:[1.00]

Q.No.25: Two concentric circles are centred at O. The area of shaded region, if outer and inner radii are 14 cm and 7 cm respectively, is

(a) 462 cm^2
(b) 154 cm^2
(c) 231 cm^2
(d) 308 cm^2

Marks:[1.00]

Q.No.26: $\frac{1}{1+\sin\ \theta} + \frac{1}{1-\sin\ \theta}$ can be simplified to get
(a) $2\cos^2\theta$
(b) $\frac{1}{2}\sec^2\theta$
(c) $\frac{2}{\sin^2\theta}$
(d) $2\sec^2\theta$ **Marks:[1.00]**

Q.No.27: The origin divides the line segment AB joining the points A(1, −3) and B(−3, 9) in the ratio :
(a) 3 : 1
(b) 1 : 3
(c) 2 : 3
(d) 1 : 1   **Marks:[1.00]**

Q.No.28: The perpendicular bisector of a line segment A(−8, 0) and B(8, 0) passes through a point (0, k). The value of k is
(a) 0 only
(b) 0 or 8 only
(c) any real number
(d) any non-zero real number   **Marks:[1.00]**

Q.No.29: Which of the following is a correct statement?
(a) Two congruent figures are always similar.
(b) Two similar figures are always congruent.
(c) All rectangles are similar.
(d) The polygons having same number of sides are similar.   **Marks:[1.00]**

Q.No.30: The solution of the pair of linear equations $x = -5$ and $y = 6$ is
(a) (−5, 6)
(b) (−5, 0)
(c) (0, 6)
(d) (0, 0)   **Marks:[1.00]**

Q.No.31: A circle of radius 3 units is centered at (0, 0). Which of the following points lie outside the circle?
(a) (−1, −1)

(b) (0, 3)
(c) (1, 2)
(d) (3, 1) **Marks:[1.00]**

Q.No.32: The value of k for which the pair of linear equations $3x + 5y = 8$ and $kx + 15y = 24$ has infinitely many solutions, is
(a) 3
(b) 9
(c) 5
(d) 15 **Marks:[1.00]**

Q.No.33: HCF of two consecutive even numbers is
(a) 0
(b) 1
(c) 2
(d) 4 **Marks:[1.00]**

Q.No.34: The zeroes of quadratic polynomial $x^2 + 99x + 127$ are
(a) both negative
(b) both positive
(c) one positive and one negative
(d) reciprocal of each other **Marks:[1.00]**

Q.No.35: The mid-point of line segment joining the points (−3, 9) and (−6, −4) is
(a) $\left(\frac{-3}{2}, \frac{-13}{2} \right)$
(b) $\left(\frac{9}{2}, \frac{-5}{2} \right)$
(c) $\left(\frac{-9}{2}, \frac{5}{2} \right)$
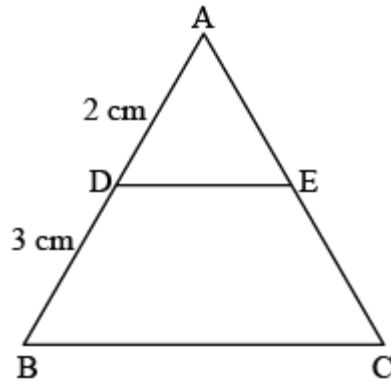(d) $\left(\frac{9}{2}, \frac{5}{2} \right)$ **Marks:[1.00]**

Q.No.36: The decimal expansion of $\frac{13}{2 \times 5^2 \times 7}$ is
(a) terminating after 1 decimal place
(b) non-terminating and non-repeating
(c) terminating after 2 decimal places

(d) non-terminating but repeating

<div align="right">**Marks:[1.00]**</div>

Q.No.37: In ΔABC, DE || BC, AD = 2 cm, DB = 3 cm, DE : BC is equal to

(a) 2 : 3
(b) 2 : 5
(c) 1 : 2
(d) 3 : 5

<div align="right">**Marks:[1.00]**</div>

Q.No.38: The (HCF × LCM) for the numbers 50 and 20 is
(a) 1000
(b) 50
(c) 100
(d) 500

<div align="right">**Marks:[1.00]**</div>

Q.No.39: For which natural number n, 6^n ends with digit zero?
(a) 6
(b) 5
(c) 0
(d) None

<div align="right">**Marks:[1.00]**</div>

Q.No.40: $(1 + \tan^2 A)(1 + \sin A)(1 - \sin A)$ is equal to
(a) $\dfrac{\cos^2 A}{\sec^2 A}$
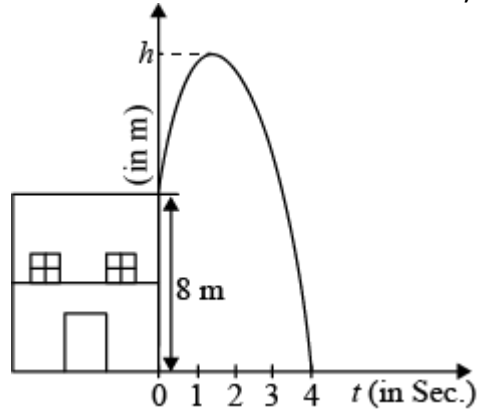(b) 1
(c) 0
(d) 2

<div align="right">**Marks:[1.00]**</div>

Section C

Q.No.41: Sukriti throws a ball upwards, from a rooftop which is 8 m high from ground level. The ball reaches to some maximum height and then returns and hit the ground.

It height of the ball at time t (in sec) is represented by $h(m)$, then equation of its path is given as $h = -t^2 + 2t + 8$

Based on above information, answer the following:

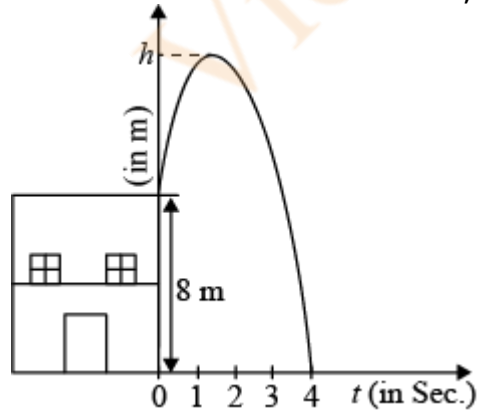The maximum height achieved by ball is
(a) 7 m
(b) 8 m
(c) 9 m
(d) 10 m

Marks:[1.00]

Q.No.42:
Sukriti throws a ball upwards, from a rooftop which is 8 m high from ground level. The ball reaches to some maximum height and then returns and hit the ground.

It height of the ball at time t (in sec) is represented by $h(m)$, then equation of its path is given as $h = -t^2 + 2t + 8$

Based on above information, answer the following:

The polynomial represented by above graph is
(a) linear polynomial
(b) quadratic polynomial
(c) constant polynomial

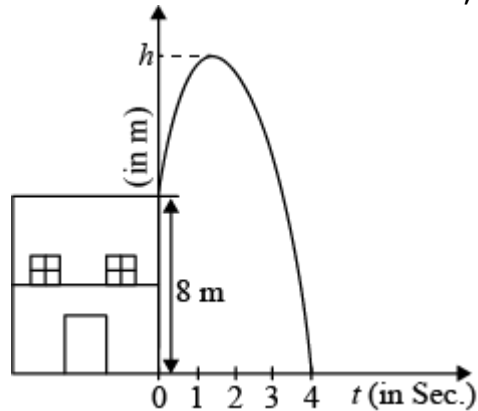(d) cubic polynomial

<div align="right">**Marks:[1.00]**</div>

Q.No.43: Sukriti throws a ball upwards, from a rooftop which is 8 m high from ground level. The ball reaches to some maximum height and then returns and hit the ground.
It height of the ball at time t (in sec) is represented by $h(m)$, then equation of its path is given as $h = -t^2 + 2t + 8$
Based on above information, answer the following:


Time taken by ball to reach maximum height is
(a) 2 sec.
(b) 4 sec.
(c) 1 sec.
(d) 2 min.

<div align="right">**Marks:[1.00]**</div>

Q.No.44: Sukriti throws a ball upwards, from a rooftop which is 8 m high from ground level. The ball reaches to some maximum height and then returns and hit the ground.
It height of the ball at time t (in sec) is represented by $h(m)$, then equation of its path is given as $h = -t^2 + 2t + 8$
Based on above information, answer the following:
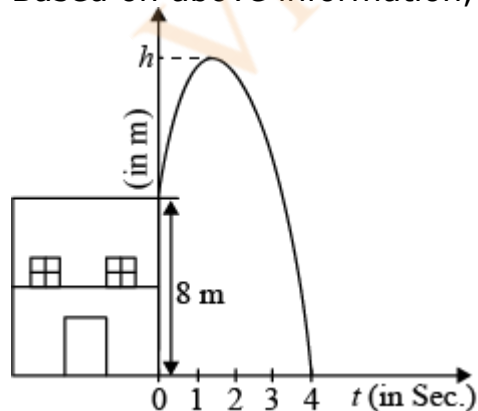
Number of zeroes of the polynomial whose graph is given, is
(a) 1
(b) 2

(c) 0
(d) 3

Q.No.45: Sukriti throws a ball upwards, from a rooftop which is 8 m high from ground level. The ball reaches to some maximum height and then returns and hit the ground.
It height of the ball at time t (in sec) is represented by $h(m)$, then equation of its path is given as $h = -t^2 + 2t + 8$
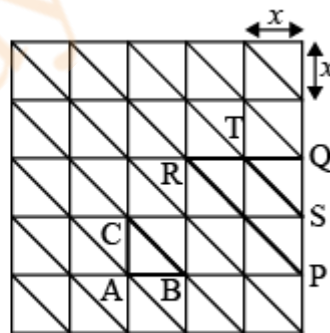Based on above information, answer the following:
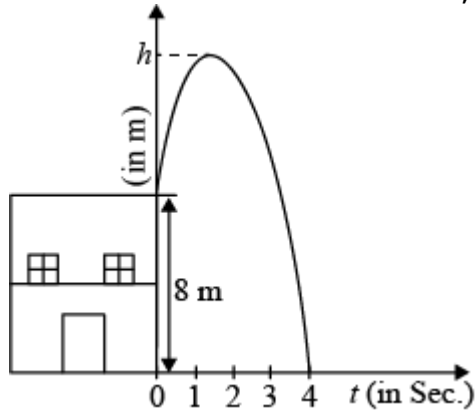
Zeroes of the polynomial are
(a) 4
(b) −2, 4
(c) 2, 4
(d) 0, 4

Marks:[1.00]

Q.No.46: Case study-II

Diagrammatic View

Quilts are available in various colours and design. Geometric design includes shapes like squares, triangles, rectangles, hexagons etc.
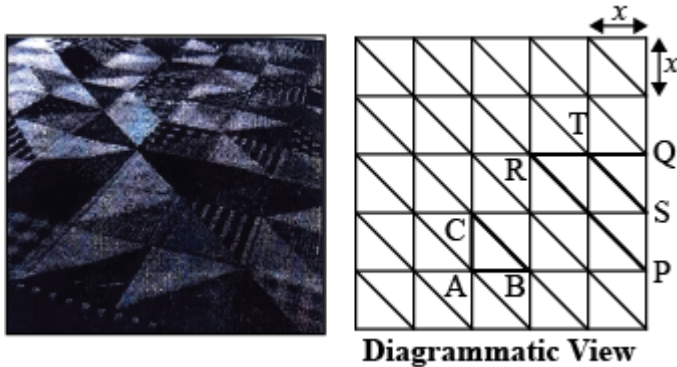One such design is shown above. Two triangles are highlighted, ΔABC and ΔPQR.
Based on above information, answer the following questions:
Which of the following criteria is not suitable for ΔABC to be similar to ΔQRP ?

(a) SAS
(b) AAA
(c) SSS
(d) RHS **Marks:[1.00]**

Q.No.47: Case study-II

Diagrammatic View

Quilts are available in various colours and design. Geometric design includes shapes like squares, triangles, rectangles, hexagons etc.
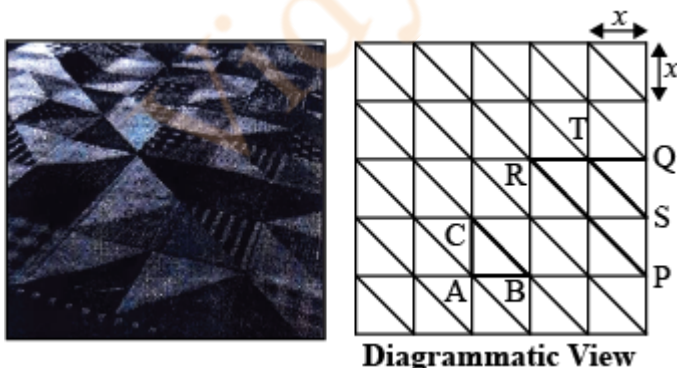One such design is shown above. Two triangles are highlighted, ΔABC and ΔPQR.
Based on above information, answer the following questions:
If each square is of length x unit, then length BC is equal to

(a) $x\sqrt{2}$ unit
(b) $2x$ unit
(c) $2\sqrt{x}$ unit
(d) $x\sqrt{x}$ unit **Marks:[1.00]**

Q.No.48: Case study-II

Diagrammatic View

Quilts are available in various colours and design. Geometric design includes shapes like squares, triangles, rectangles, hexagons etc.
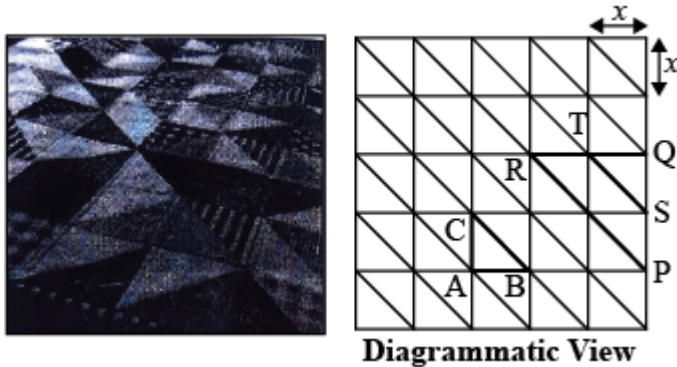One such design is shown above. Two triangles are highlighted, ΔABC and ΔPQR.
Based on above information, answer the following questions:
Ratio BC : PR is equal to

(a) 2 : 1
(b) 1 : 4
(c) 1 : 2
(d) 4 : 1   **Marks:[1.00]**

Q.No.49: Case study-II

Diagrammatic View

Quilts are available in various colours and design. Geometric design includes shapes like squares, triangles, rectangles, hexagons etc.
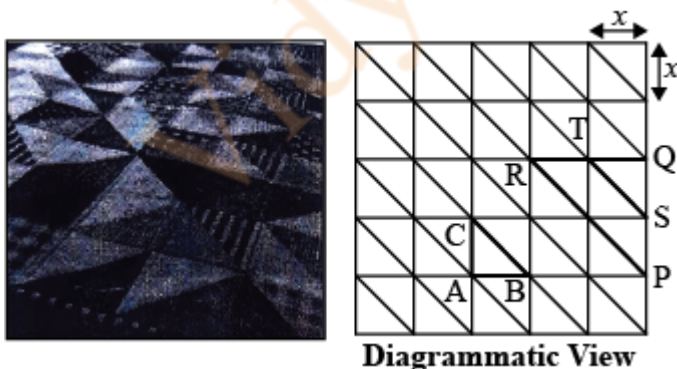One such design is shown above. Two triangles are highlighted, ΔABC and ΔPQR.
Based on above information, answer the following questions:
ar(PQR) : ar(ABC) is equal to
(a) 2 : 1
(b) 1 : 4
(c) 4 : 1
(d) 1 : 8   **Marks:[1.00]**

Q.No.50: Case study-II

Diagrammatic View

Quilts are available in various colours and design. Geometric design includes shapes like squares, triangles, rectangles, hexagons etc.
One such design is shown above. Two triangles are highlighted, ΔABC and ΔPQR.
Based on above information, answer the following questions:
Which of the following is not true?
(a) ΔTQS ~ ΔPQR

(b) ΔCBA ~ ΔSTQ
(c) ΔBAC ~ ΔPQR
(d) ΔPQR ~ ΔABC

Marks:[1.00]