



ST. LAWRENCE HIGH SCHOOL

27, BALLYGUNGE CIRCULAR ROAD

**Class : 10****Subject : MATHEMATICS****Term : FIRST TERM****Max Marks : 60****Q 1 :** The roots of the equation $x^2 - 3x - 10 = 0$ are**Marks : 1**

1. 2, - 5
2. 2, 5
- 3. - 2, 5**
4. - 2, - 5

 (This Answer is Correct)**Q 2 :** If the simple interest of Rs 425 in 3 years be Rs 51, then the rate of interest per annum is**Marks : 1**

- 1. 4%**
2. 3%
3. 4.5%
4. 2%

 (This Answer is Correct)**Q 3 :** The compound interest on Rs x in 2 years at 10% per annum is**Marks : 1**

1. Rs x
- 2. Rs $21x/100$**
3. Rs $21/100x$
4. Rs 21x

 (This Answer is Correct)**Q 4 :** The length, breadth and area of four walls of a room is 8m, 6m, and 112 sq. m. Then height of the room is**Marks : 1**

1. 3.2m
2. 7m
- 3. 4m**
4. 10m

 (This Answer is Correct)**Q 5 :** If two cylinders of same lateral surface have their radii in the ratio of 4 : 9, then the ratio of their heights**Marks : 1**

1. 2 : 3
2. 3 : 2
3. 4 : 9
- 4. 9 : 4**

 (This Answer is Correct)

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- Q 6 :** The radii and heights of two cylinders are in the ratio of 2 : 3 and 5 : 3 respectively. The ratio of their volumes is **Marks : 1**
1. 10 : 17
 2. 20 : 27
 3. 17 : 27
 4. 20 : 37
- (This Answer is Correct)
-

- Q 7 :** If the ratio of diameters of two spheres is 3 : 5, then the ratio of their surface area is **Marks : 1**
1. 3 : 5
 2. 5 : 3
 3. 27 : 125
 4. 9 : 25
- (This Answer is Correct)
-

- Q 8 :** The volumes of two spheres are in the ratio of 64 : 27. The ratio of their surface area is **Marks : 1**
1. 3 : 4
 2. 4 : 3
 3. 9 : 16
 4. 16 : 9
- (This Answer is Correct)
-

- Q 9 :** The number of balls of radius 1 cm that can be made from a sphere of radius 10cm is **Marks : 1**
1. 100
 2. 1000
 3. 10000
 4. 100000
- (This Answer is Correct)
-

- Q 10 :** The intersection point of the perpendicular bisectors of two chords of any circle is called the **Marks : 1**
1. incentre
 2. circum centre
 3. radus
 4. ortho centre
- (This Answer is Correct)
-

- Q 11 :** The distances of the vertices of a triangle from the point of intersection of the prependicular bisectors of the sides are **Marks : 1**
1. perpendicular
 2. parallel
 3. equal
- (This Answer is Correct)
-

4 . unequal

Q 12 : The centre of the incircle of a triangle is called

Marks : 1

- 1 . circum centre
- 2 . centroid
- 3 . ortho centre
- 4 . incentre**

(This Answer is Correct)

Q 13 : If $x = 3 + 2\sqrt{2}$ then the value of $x + 1/x$, is

Marks : 1

- 1 . $4\sqrt{2}$
- 2 . 6**
- 3 . 4
- 4 . 3

(This Answer is Correct)

Q 14 : In a joint business the ratio of the capitals of three partners is 5 : 7 : 9. If the profit in the business is Rs 420, then the third partner will get

Marks : 1

- 1 . Rs 100
- 2 . Rs 140
- 3 . Rs 180**
- 4 . Rs 200

(This Answer is Correct)

Q 15 : A invests Rs 600 for 5 months and B invests Rs 500 for 9 months in a business. The part of the profit will be distributed among them in the ratio

Marks : 1

- 1 . 3 : 2
- 2 . 2 : 3**
- 3 . 4 : 3
- 4 . 6 : 5

(This Answer is Correct)

Q 16 : From a pt. Q, the length of the tangent to a circle is 24cm and distance of Q from the centre is 25cm. The radius of the circle is

Marks : 1

- 1 . 7cm**
- 2 . 12cm
- 3 . 15cm
- 4 . 24.5cm

(This Answer is Correct)

Q 17 : The angle between two radii of a circle is 130° , the angle between the tangents at the ends of the radii is

Marks : 1

1. 90°
2. 50°
3. 70°
4. 40°

(This Answer is Correct)

Q 18 : O is the centre of the circle. Length of the chord PQ is equal to the radius of the circle. R is any point on the circle on the major arc, then $\angle PRQ$

Marks : 1

1. 60°
2. 45°
3. 15°
4. 30°

(This Answer is Correct)

Q 19 : The value of $\cos 65^\circ \sin 25^\circ + \sin 65^\circ \cos 25^\circ$

Marks : 1

1. 0
2. 1
3. 2
4. 4

(This Answer is Correct)

Q 20 : If $\sin 3x = \sin 60^\circ \cos 30^\circ + \cos 60^\circ \sin 30^\circ$, then the value of x is

Marks : 1

1. 20°
2. 15°
3. 10°
4. 30°

(This Answer is Correct)

Q 21 : The value of $\operatorname{cosec}^2 55^\circ - \tan^2 35^\circ$ is

Marks : 1

1. 0
2. -1
3. 2
4. 1

(This Answer is Correct)

Q 22 : If the length of the shadow of a tower is $\sqrt{3}$ times that of its height, then the angle of elevation of the sun is

Marks : 1

1. 30°
2. 15°
3. 45°
4. 60°

(This Answer is Correct)

Q 23 : A ladder 14m long rests against a wall. If the foot of the ladder is 7m from the wall, then the angle of elevation is **Marks : 1**

- 1 . 15°
- 2 . 30°
- 3 . 45°
- 4 . 60°

(This Answer is Correct)

Q 24 : If the interest of Rs p in n years at r % simple interest be I then **Marks : 1**

- 1 . $I = pnr$
- 2 . $100 = pnrI$
- 3 . $pnr = 100I$
- 4 . $pnr = 1/100$

(This Answer is Correct)

Q 25 : If the compound interest in 1 year of a certain principal at a certain rate per annum be Rs x, and the simple interest for 1 year is Rs y, then **Marks : 1**

- 1 . $x > y$
- 2 . $x < y$
- 3 . $x = y$
- 4 . $x \geq y$

(This Answer is Correct)

Q 26 : Three dimensions of a cuboid are p , q and r. Then the volume of the solid is **Marks : 1**

- 1 . pqr
- 2 . (pq)/r
- 3 . (pr)/q
- 4 . (qr)/p

(This Answer is Correct)

Q 27 : In a cylinder if radius is halved and height is doubled, then volume will be **Marks : 1**

- 1 . same
- 2 . doubled
- 3 . halved
- 4 . four times

(This Answer is Correct)

Q 28 : If a well of diameter 8m has been dug to the depth of 14m, then the volume of the earth dug out is **Marks : 1**

- 1 . 352 m^3
- 2 . 704 m^3
- 3 . 1408 m^3

(This Answer is Correct)

4 . 2816 m³

Q 29 : If the diameter of the base of a cone is 10 cm and its height is 12 cm, then its curved surface area is **Marks : 1**

1 . $60 \pi \text{cm}^2$

2 . $65 \pi \text{cm}^2$

(This Answer is Correct)

3 . $90 \pi \text{cm}^2$

4 . $120 \pi \text{cm}^2$

Q 30 : If the diameter of the base of a cone is 12 cm and its height is 20 cm, then its volume is **Marks : 1**

1 . $240 \pi \text{cm}^3$

(This Answer is Correct)

2 . $480 \pi \text{cm}^3$

3 . $720 \pi \text{cm}^3$

4 . $960 \pi \text{cm}^3$

Q 31 : If the radius of a sphere is $2r$, then its volume will be **Marks : 1**

1 . $\frac{1}{8} \pi r^3$

2 . $4 \pi r^3$

3 . $\frac{8}{3} \pi r^3$

4 . $\frac{32}{3} \pi r^3$

(This Answer is Correct)

Q 32 : During conversion of a solid from one shape to another, the volume of the new shape will **Marks : 1**

1 . increase

2 . decrease

3 . remain unaltered

(This Answer is Correct)

4 . be doubled

Q 33 : If a solid of one shape be converted to another, then the surface area of the new solid **Marks : 1**

1 . remains same

2 . increases

3 . decreases

4 . can't say

(This Answer is Correct)

Q 34 : A solid piece of iron in the form of a cuboid of dimensions 49cm x 33cm x 24cm is moulded to form a sphere. The radius of the sphere is **Marks : 1**

1 . 21cm

(This Answer is Correct)

2 . 23cm

3 . 25cm

4 . 19cm

Q 35 : The sides of a triangle with respect to circumcircle of a triangle are _____ of the circle. **Marks :** 1

1 . chords

(This Answer is Correct)

2 . radii

3 . diameters

4 . tangents

Q 36 : The least rationalising factor of $\sqrt{54}$ is **Marks :** 1

1 . $\sqrt{2}$

2 . $\sqrt{3}$

3 . $\sqrt{6}$

(This Answer is Correct)

4 . $\sqrt{8}$

Q 37 : If $x \propto y$, $y \propto z$, $z \propto x$, and the constants of variation are k , l and m , then **Marks :** 1

1 . $k = l = m$

2 . $k+l+m=1$

3 . $k+l+m = 0$

4 . $klm = 1$

(This Answer is Correct)

Q 38 : ABCD is a cyclic quadrilateral such that AB is a diameter of the circle circumscribing it and $\angle ADC = 140^\circ$. Then $\angle BAC$ is equal to **Marks :** 1

1 . 80°

2 . 50°

(This Answer is Correct)

3 . 40°

4 . 30°

Q 39 : AB is a diameter of a circle. If C is any point on the semi circle and $AC = BC$, then $\angle CAB$ is equal to **Marks :** 1

1 . 45°

2 . 30°

3 . 60°

4 . 90°

(This Answer is Correct)

Q 40 : The lengths of two chords of a circle with centre O are equal. If $\angle AOB = 60^\circ$, then $\angle COD$ is equal to **Marks :** 1

1 . 40°

2 . 60°

(This Answer is Correct)

3 . 30°

4 . 90°

Q 41 : The sum of the opposite angles of a cyclic quadrilateral is

Marks : 1

1 . 90°

2 . 100°

3 . 120°

4 . 180°

(This Answer is Correct)

Q 42 : If any side of a cyclic quadrilateral be extended in such a way that the exterior angle so formed is _____ to the interior opposite angles.

Marks : 1

1 . perpendicular

2 . supplementary

3 . equal

4 . unequal

(This Answer is Correct)

Q 43 : $(\sec^2 \theta - 1)(\operatorname{cosec}^2 \theta - 1)$ is equal to

Marks : 1

1 . -1

2 . 1

3 . 0

4 . 2

(This Answer is Correct)

Q 44 : If $2 \cos 3\theta = 1$, then the value of θ is

Marks : 1

1 . 10°

2 . 15°

3 . 20°

4 . 30°

(This Answer is Correct)

Q 45 : $\sin 45^\circ + \cos 45^\circ = \sqrt{x}$, where the value of x is

Marks : 1

1 . 4

2 . 2

3 . 1

4 . 3

(This Answer is Correct)

Q 46 : The value of $\sin(90^\circ - \theta)\sec \theta + \cos(90^\circ - \theta)\operatorname{cosec} \theta$ is

Marks : 1

- 1 . 0
- 2 . 1
- 3 . 2**
- 4 . 3

(This Answer is Correct)

Q 47 : The value of $\text{Cos}^2 15^\circ + \text{Cos}^2 75^\circ$ is

Marks : 1

- 1 . 1**
- 2 . 2
- 3 . $\text{Sin}^2 15^\circ$
- 4 . $2 \text{Sin}^2 15^\circ$

(This Answer is Correct)

Q 48 : If the angle of elevation of sun is _____, then lengths of a post and its shadow are equal

Marks : 1

- 1 . 60°
- 2 . 45°**
- 3 . 30°
- 4 . 90°

(This Answer is Correct)

Q 49 : If a pole of 6m high casts a shadow of $2\sqrt{3}$ m long on the ground, then the sun's elevation is

Marks : 1

- 1 . 60°**
- 2 . 45°
- 3 . 30°
- 4 . 90°

(This Answer is Correct)

Q 50 : The number of diagonals of a cuboid is

Marks : 1

- 1 . 1
- 2 . 4**
- 3 . 2
- 4 . 3

(This Answer is Correct)

Q 51 : If $1/2$ is a root of the quadratic equation $4x^2 - 4kx + k + 5 = 0$, then the value of k is

Marks : 1

- 1 . -6
- 2 . -3
- 3 . 3
- 4 . 6**

(This Answer is Correct)

Q 52 : If the equation $2x^2 - 5x + (k+3) = 0$, has equal roots then the value of k is

Marks : 1

1. $9/8$
2. $1/8$
3. $-9/8$
4. $-1/8$

(This Answer is Correct)

Q 53 : If a sum of money doubles itself in 16 years, then the rate of interest is

Marks : 1

1. 5%
2. 5.5%
3. 6%
4. 6.25%

(This Answer is Correct)

Q 54 : A solid right circular cone of height 24cm and base radius 6cm is melted to a sphere, then radius of sphere is

Marks : 1

1. 4cm
2. 6cm
3. 8cm
4. 12cm

(This Answer is Correct)

Q 55 : Twelve solid spheres of the same size are made by melting a solid metallic cylinder of base diameter 2cm and height 16cm. The diameter of each sphere

Marks : 1

1. 4cm
2. 3cm
3. 2cm
4. 6cm

(This Answer is Correct)

Q 56 : The simplest value of $\sqrt{108} - \sqrt{75}$ is

Marks : 1

1. $\sqrt{3}$
2. $2\sqrt{3}$
3. $3\sqrt{3}$
4. $\sqrt{33}$

(This Answer is Correct)

Q 57 : If $x \propto yz$, $y \propto ab^2$, and $z \propto (b/a)$, then

Marks : 1

1. $x \propto a$
2. $x \propto a^2$
3. $x \propto a^3$
4. $x \propto b^3$

(This Answer is Correct)

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- Q 58 :** If tangents PA and PB from an exterior pt. P to a circle with centre O are inclined to each other at an angle of 80° , then $\angle POA$ is equal to **Marks : 1**
- 1 . 60°
2 . 70°
3 . 100°
4 . 50°
- (This Answer is Correct)
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- Q 59 :** From a point which is at a distance of 13 cm from the centre O of a circle of radius 5 cm, the pair of tangents PQ & PR to the circle are drawn. Then the area of the quadrilateral PQOR is **Marks : 1**
- 1 . 60 cm^2
2 . 65 cm^2
3 . 30 cm^2
4 . 32.5 cm^2
- (This Answer is Correct)
-

- Q 60 :** Radii of two concentric circles are 4cm & 5 cm. The length of the chord of one circle which is tangent to the other is **Marks : 1**
- 1 . 3cm
2 . 9cm
3 . 6cm
4 . 1cm
- (This Answer is Correct)
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