

Time : 45 Mins

Class-IX

Maximum Marks : 50

General Instructions:

1. **All questions are mandatory.** Read the questions carefully before selecting an answer.
2. The question paper contains **25 MCQ**, each carrying **2 marks**.
3. No negative marking for unattempt questions; one mark will be deducted for each incorrect /overwriting or multiple answers. Illegible answers may not be evaluated.
4. Answers must be marked by writing the correct option (A/B/C/D) in the **Answer Sheet**.
5. **Use of calculators, smart watches, or any electronic devices is strictly prohibited.**
6. Rough work must be done **only in the A4 sheet provided by the invigilator**.
7. Ensure that your **Name, Roll Number, School Code, and other required details** are correctly filled in the Answer Sheet before submission.
8. The **final Answer Sheet along with the question paper must be submitted to the invigilator** before leaving the examination hall.
9. Any form of **unfair practice will lead to immediate disqualification**.

Q.1. Which Indian Mathematician is famously known as Euler's Spoiler?

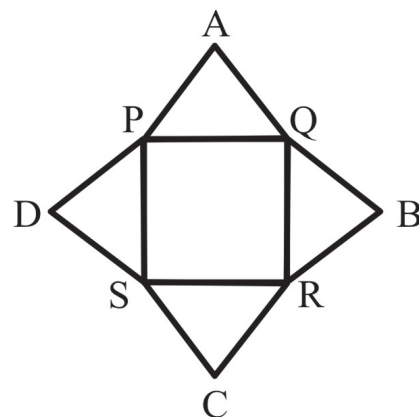
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|--------------------------|--------------------|
| (a) Ramanujan | (b) S.S. Shikhande |
| (c) Kombur Sesha Iyengar | (d) Ramdas Bhirud |

Q.2. Sonam is x years old and her elder brother Rahul is y years old. Which of the following options will not be true, with respect to time.

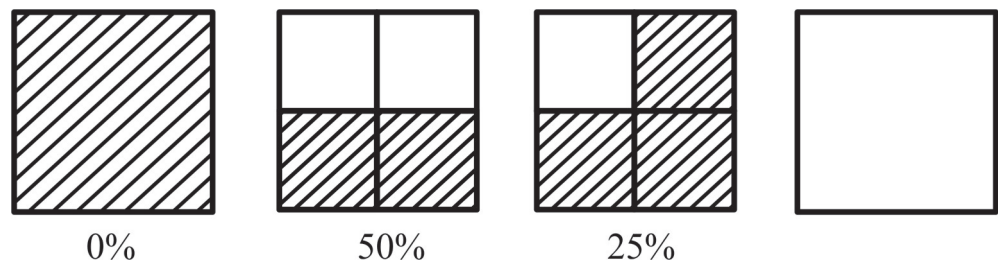
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|-----------------|--------------------|
| (a) $x^3 = y^3$ | (b) $y - x \neq 0$ |
| (c) $y > x$ | (d) $x - y < 0$ |

Q.3. When the given picture is magnified 40 times over, which of the following will not change?

- Area
- Perimeter
- Edges
- Angle between the sides



Q.4. Observe the pattern and find what percentage does the fourth figure represents.



- (a) 0%
- (b) $12\frac{1}{2}\%$
- (c) 75%
- (d) 100%

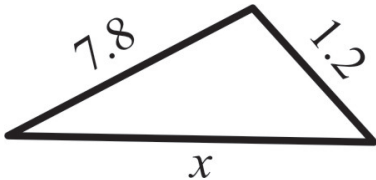
Q.5. Which of the following options will fit the sequence?

727, 998, 1329, ?, 2742

- (a) 1624
- (b) 1726
- (c) 2540
- (d) 2678

Q.6. Based on the given figure, which of the following will best describe the conditions on side x of triangle?

- (a) $x < 7.8$
- (b) $x > 1.2$
- (c) $1.2 < x < 7.8$
- (d) $6.6 < x < 9$



Q.7. If a number ‘ x ’ exceeds the other number ‘ y ’ by $p\%$, then which of the following equations is correct?

- (a) $x - y = \frac{p}{100}$
- (b) $y = x + 100p$
- (c) $x = p\left(\frac{y}{100} + 1\right)$
- (d) $x = y\left(1 + \frac{p}{100}\right)$

Q.8. Identify the type of quadrilateral ‘B’.

Type of Quadrilateral		Adjacent Sides	
Opposite Sides		Equal	Not Equal
	Parallel	A	B
	Not Parallel	C	D

- (a) Parallelogram
- (b) Trapezium
- (c) Rhombus
- (d) Rectangle

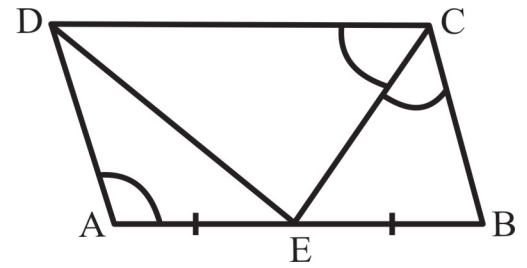
- Q.9.** “By three and get one free” what is the % of discount is being offered here?
 (a) 20% (b) 28.56% (c) 33% (d) 25%
- Q.10.** $\frac{8^x + 27^x}{12^x + 18^x} = \frac{7}{6}$, Then value of x is:
 (a) ± 1 (b) ± 2 (c) $\pm \frac{3}{2}$ (d) $\pm \frac{2}{3}$
- Q.11.** If $\frac{97}{19} = x + \frac{1}{y + \frac{1}{z}}$ where x, y, z are positive integers, then the value of $x + y + z$ is:
 (a) 16 (b) 17 (c) 18 (d) 19
- Q.12.** The average wages of 50 workers is ₹ 10,000 and average worker of 30 of them is ₹ 12,000. Then the average wages of the remaining workers is:
 (a) 7000 (b) 8500
 (c) 8000 (d) None of these
- Q.13.** Let R and r be the external and internal radius of a hollow cylinder and let h be its height, then total surface area of cylinder (in square units) is:
 (a) $2\pi R(r + h)$ (b) $2\pi r(R + h)$
 (c) $2\pi(R + r)(R - r + h)$ (d) $\pi R^2 + \pi r^2 + 2\pi rh + 2\pi Rh$
- Q.14.** On the occasion of a birthday party, there the ratio of males to females was 5 : 3. However when 10 males left the party, the ratio changed to 1 : 1. How many people were there originally in the party?
 (a) 40 (b) 48 (c) 64 (d) 56
- Q.15.** Read the following information carefully answer the question given below:
 A + B means A is the mother of B
 A – B means A is the brother of B
 A Ⓐ B means A is the father of B
 A × B means A is the sister of B
 Which of the following shows that P is the great grand mother of U?
 (a) $U + Q + R \times S - T \textcircled{a} P$
 (b) $P \times Q + R \textcircled{a} S \times T - U$
 (c) $P + Q + R \times S - T \times U$
 (d) $P + Q \textcircled{a} R \times S - T \textcircled{a} U$
- Q.16.** If $\frac{b}{a} = 0.7$, then the value of $\frac{a-b}{a+b} + \frac{11}{34}$ is:
 (a) 1 (b) 0.5 (c) 0.3 (d) 0.2

- Q.17.** A rectangular box has dimensions x, y, z units, when $x < y < z$. If one dimensions is increased by one unit, then the increase in volume is:
- Greatest when x is increased
 - Greatest when y is increased
 - Greatest when z is increased
 - The same, regardless of whichever dimension is increased.
- Q.18.** Which of the following statements is/are correct?
- If two sides of a triangle are unequal, the larger side has the greatest angle opposite to it.
 - The sum of any two sides of a triangle is greater than its third side.
 - If all the line segments can be drawn to a given line from an external point, the perpendicular line segment is the shortest
 - If all three angles of a triangle are equal it is called a scalene triangle
- I and III
 - I, II and III
 - I, III and IV
 - Only III
- Q.19.** If $x = a(b - c)$, $y = b(c - a)$, $z = c(a - b)$, then the value of $\left(\frac{x}{a}\right)^3 + \left(\frac{y}{b}\right)^3 + \left(\frac{z}{c}\right)^3$ is:
- $\frac{3xyz}{abc}$
 - $3xyzabc$
 - $\frac{xyz}{abc}$
 - 3
- Q.20.** Two years ago, the ratio of A's age to B's age at that time was 5:9. A's age three years ago was 13 years less than B's age six years ago. B's present age is:
- 38 years
 - 30 years
 - 34 years
 - 32 years
- Q.21.** If $x^3 + 5x^2 + 10k$ leaves remainder $-2x$ when divided by $x^2 + 2$, then the value of k is:
- 2
 - 1
 - 1
 - 2
- Q.22.** The speed of Keshav is 5km/h more than that of Amar. Amar reaches his home from office 2 hours earlier than Keshav. If Amar and Keshav stay 12 km and 48 km from their respective offices, then the speed of Keshav is _____:
- 10 km/h
 - 4 km/h
 - 9 km/h
 - 8 km/h
- Q.23.** If p is a prime number greater than 5, then $(p^2 - 1)$ is:
- Never divisible by 6
 - Always divisible by 6 and may or may not be divisible by 12
 - Always divisible by 12 and may or may not be divisible by 24
 - Always divisible by 24

Q.24. ABCD is a parallelogram, E is the mid-point of AB and CE bisect angle BCD.

The value of $\angle DEC$ is:

- (a) 60° (b) 90°
(c) 100° (d) 120°



Q.25. Read the statements and select the correct option:

Statement I: The quadrilateral formed by the angle by sector of a cyclic quadrilateral is also cyclic.

Statement II: If ABCD is a cyclic quadrilateral such that AB is the diameter of the circle circumscribing it and $\angle ABC = 140^\circ$ then $\angle BAC = 50^\circ$.

- (a) Statement I is true but Statement II is false
(b) Statement II is true but Statement I is false
(c) Both Statement I & II are true
(d) Both Statement I & II are false