



BK BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
SENIOR SECONDARY CO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL

ANNUAL EXAMINATION , 2026

MATHEMATICS (041)



Class : VIII
Date : 10-03-2025
Marks : 80

MARKING SCHEME- Set- 1

Duration: 3 Hrs
Max.

SECTION A

Each question carries 1 mark. (mcq)

1. $\frac{1}{2}$ [B]
2. Two [C]
3. 1:3 [B]
4. 10 [A]
5. $(a + b) (a - b)$ [A]
6. $8a - 2ab + 2b - 15$ [C]
7. 30 cm [C]
8. 216 cm^2 [C]
9. $(3x - 2) (2y - 3)$ [B]
10. $(m - 4) (m + 4)$ [C]
11. Line graph [D]
12. Origin [C]
13. 45 years [D]
14. 6 [A]
15. 38 cm [D]
16. 60^0 [A]
17. 1 [D]
18. 4.92×10^5 [B]
19. [C]
20. [D]

SECTION B

21. Total number of balls in the bag: 3 red + 5 black + 4 white = 12 balls 1/2
 Number of white balls = 4 1/2
 Probability (white) = $\frac{4}{12} = \frac{1}{3}$ 1/2
 Probability (red) = $\frac{3}{12} = \frac{1}{4}$ 1/2
22. Ratio 3 : 4 = $\frac{3}{4} \times 100\% = 75\%$ 1/2 + 1/2
 Ratio 2 : 3 = $\frac{2}{3} \times 100\% = 66\frac{2}{3}\%$ 1/2 + 1/2
- OR
- Simple interest = $\frac{P \times R \times T}{100}$ 1/2
 $= \frac{8500 \times 20 \times 5}{100}$ 1
 S.I. = Rs 8500 1/2

23. i) $(2p^2q^2 - 3pq + 4) + (5 + 7pq - 3p^2q^2) = -p^2q^2 + 4pq + 9$ 1
 ii) $l^2 + m^2 + m^2 + n^2 + n^2 + l^2 + 2lm + 2mn + 2nl = 2(l^2 + m^2 + n^2 + lm + mn + nl)$ 1

24. i) $5(3) + 5(x) - 2x(3) - 2x(x) = 15 + 5x - 6x - 2x^2$ 1
 OR $= -2x^2 - x + 15$

ii) $(x + 7y)(7x - y) = x(7x - y) + 7y(7x - y)$ 1/2
 $= 7x^2 - xy + 49xy - 7y^2$ 1/2

25. Find the value of: i) $(3^0 + 4^{-1}) \times 2^2 = (1 + \frac{1}{4}) \times 4$ 1/2

$= \frac{5}{4} \times 4$ 1/2

ii) $(\frac{1}{2})^{-5} = (\frac{2}{1})^5$ 1/2

$= 32$ 1/2

OR

Simplify using laws of exponents: $(\frac{5}{8})^{-2} \times (\frac{5}{8})^{-3} \times (\frac{5}{8})^5$

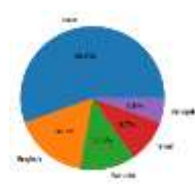
$= (\frac{5}{8})^{-2 + (-3) + 5}$ 1

$= (\frac{5}{8})^0$ 1/2

$= 1$ 1/2

SECTION C

26. Central angle 1
 For correct figure: 2



OR

27. Simplify. i) $(7m - 8n)^2 + (7m + 8n)^2$ 1
 $= 49m^2 - 112mn + 64n^2 + 49m^2 + 112mn + 64n^2$ 1/2
 $= 98m^2 + 128n^2$

ii) $(4m + 5n)^2 + (5m + 4n)^2 = 16m^2 + 40mn + 25n^2 + 25m^2 + 40mn + 16n^2$ 1
 $= 41m^2 + 80mn + 41n^2$ 1/2

28. a) $49y^2 + 84yz + 36z^2 = (7y)^2 + 2 \times 7y \times 6z + (6z)^2$ 1
 $= (7y + 6z)^2$ 1/2

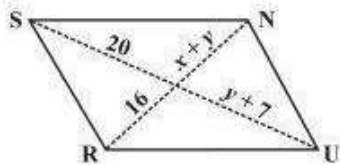
b) $9x^2y^2 - 16 = (3xy)^2 - (4)^2$ 1
 $= (3xy + 4)(3xy - 4)$ 1/2

29. $3(5z - 7) - 2(9z - 11) = 4(8z - 13) - 17$
 $15z - 21 - 18z - 22 = 32z - 52 - 17$ 1
 $15z - 21 - 18z + 22 = 32z - 52 - 17 = 0$ 1
 $-35z = -70$ $\frac{1}{2}$
 $z = 2$

OR

$\frac{3y-2}{4} - \frac{2y+3}{3} = \frac{2}{3} - y$
 $9y - 6 - 8y - 12 = (\frac{2}{3} - y) \times 12$ 1
 $Y - 18 = 8 - 12y$ 1
 $y = \frac{26}{13}$ $\frac{1}{2}$
 $y = 2$ $\frac{1}{2}$

30. Since adjacent angles are 180°
 $(2x + 10)^\circ + (3x - 10)^\circ = 180^\circ$ $\frac{1}{2}$
 $5x = 180$
 $x = 36$ $\frac{1}{2}$
 One angle = $2 \times 36 + 10$ $\frac{1}{2}$
 $= 82^\circ$ $\frac{1}{2}$
 Second angle = $3 \times 36 - 10$ $\frac{1}{2}$
 $= 98^\circ$ $\frac{1}{2}$



$y + 7 = 20$
 $y = 13$ 1
 $x + y = 16$
 $x + 13 = 16$ 1
 $x = 3$ 1

31. Find the value of x so that $5^{2x+1} \div 25 = 125$
 $5^{2x+1} \div 5^2 = 5^3$ 1
 $5^{2x+1-2} = 5^3$ $\frac{1}{2}$
 $2x = 3 + 1$ 1
 $x = 2$ $\frac{1}{2}$

OR

Express the following in usual form : i) 3.85×10^5 ii) 3.21×10^{-5} iii) 1.23×10^{-5}
 i) 385000 1
 ii) 0.0000321 1
 iii) 0.0000123 1

SECTION D

$$\begin{aligned}
 32. \text{ Total marked price} &= \text{Rs } (1,450 + 2 \times 850) && 1 \\
 &= \text{Rs } (1,450 + 1,700) && \frac{1}{2} \\
 &= \text{Rs } 3,150 && \frac{1}{2}
 \end{aligned}$$

Given that, the discount percentage = 10% 1/2

$$\text{Discount} = \text{Rs } (10/100 \times 3150) = \text{Rs } 315 \quad 1$$

Also, Discount = Marked price – Sale price 1/2

$$\text{Rs}315 = \text{Rs } 3150 - \text{Sale price}$$

$$\therefore \text{Sale price} = \text{Rs } (3150 - 315) \quad \frac{1}{2}$$

$$= \text{Rs } 2835 \quad \frac{1}{2}$$

The customer will have to pay Rs 2,835.

OR

$$\text{Amount} = P \left(1 + \frac{R}{100} \right)^n$$

$$= 12000 \left(1 + \frac{10}{100} \right)^2 \quad \frac{1}{2}$$

$$= \frac{12000 \times 11 \times 11}{10 \times 10} \quad 1 \frac{1}{2}$$

$$= 14520 \quad 1 \frac{1}{2}$$

$$\text{C.I.} = \text{Rs } 2520 \quad 1$$

33. Factorise the expression and divide it.

$$m^2 - 14m - 32 \div (m + 2) = m^2 - 16m + 2m - 32 \div (m + 2) \quad 1$$

$$= m(m - 16) + 2(m - 16) \div (m + 2) \quad 1 \frac{1}{2}$$

$$= (m + 2)(m - 16) \div (m + 2) \quad 1 \frac{1}{2}$$

$$= m + 2 \quad 1$$

34. Similarity : Both figures have the same length and the same height 1/2

Difference : The first figure is a cylinder and the second figure is a cube 1/2

Lateral surface area of cylinder = $2\pi r h$ 1/2

$$= 2 \times \frac{22}{7} \times 3.5 \times 7 \quad \frac{1}{2}$$

$$= 154 \text{ cm}^2 \quad \frac{1}{2}$$

lateral surface area of cube = $4(\text{side})^2$ 1/2

$$= 4 \times 7^2$$

$$= 4 \times 49 \quad \frac{1}{2}$$

$$= 196 \quad \frac{1}{2}$$

Lateral surface area of cube is 196 cm^2 1/2

Hence, the cube has a larger lateral surface area.

OR

shape of the tile is a parallelogram.

Area of parallelogram = Base \times Height 1/2

$$= 24 \text{ cm} \times 10 \text{ cm} \quad \frac{1}{2}$$

$$= 240 \text{ cm}^2 \quad \frac{1}{2}$$

The area of one tile = 240 cm^2 1/2

Required number of tiles = Area of the floor \div Area of one tile 1/2

$$= 1080 \text{ m}^2 \div 240 \text{ cm}^2 \quad \frac{1}{2}$$

$$= (1080 \times 10000) \text{ cm}^2 \div 240 \text{ cm}^2 \quad \frac{1}{2}$$

$$= 45000 \text{ tiles} \quad \frac{1}{2}$$

Thus, 45000 tiles are required to cover a floor of area 1080 m^2 .

$$35. a) x + 90^0 + 60^0 + 90^0 + 70^0 = 360^0 \quad \frac{1}{2}$$

$$x + 310^0 = 360^0 \quad \frac{1}{2}$$

$x = 360 - 310$	$\frac{1}{2}$
$x = 50^\circ$	$\frac{1}{2}$
b) $50^\circ + x = 180^\circ$ (adjacent angles of a parallelogram)	$\frac{1}{2}$
$x = 180^\circ - 50^\circ$	$\frac{1}{2}$
$= 130^\circ$	$\frac{1}{2}$
$x = y = 130^\circ$ (opposite angles of a parallelogram)	$\frac{1}{2}$
$x = z = 130^\circ$ (corresponding angle)	$\frac{1}{2}$
36. i) $950 - 300 = 650$	2
OR	
$550 + 700 = 1250$	
ii) 500	1
iii) 300	1
37. i) $8 Cr$	1
ii) $5 Cr$	1
iii) $6 Cr - 4 Cr = 2 Cr$	2
OR	
$8 Cr - 4 Cr = 4 Cr$	
38. i) Radius = $\frac{7}{2}$ cm or 3.5 cm	1
ii) CS A = $2\pi R H$	2
$= 2 \times 22 / 7 \times 7 / 2 \times 25$	
$= 550 \text{ cm}^2$	
OR	
Cost of 5 papers = 5×13.5	
$= \text{Rs } 67.5$	
iii) Volume of Cylinder = $\pi r^2 h$	1
