



BK BIRLA CENTRE FOR EDUCATION
SARALA BIRLA GROUP OF SCHOOLS
SENIOR SECONDARY| CO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL



MID-TERM EXAMINATION 2023-24

MATHEMATICS (041)

Class : VIII

Date : 11-10-2023

MARKING SCHEME

Duration : 3 Hrs

Max. Marks : 80

SECTION A

Each question carries 1 mark. (mcq)

1. Infinite rational numbers
2. $\frac{6}{5}$
3. 1
4. 4.92×10^5
5. 8^2
6. 5
7. 60 years
8. 48
9. Class Interval
10. $\frac{1}{2}$
11. $\frac{1}{6}$
12. Trinomial
13. $27y^3$
14. 0
15. $AB = CD$
16. 110°
17. 18° , 90° , 108° and 144°
18. Rhombus
19. A)
20. A)

SECTION B

21. i) $5^{-2} = \frac{1}{25}$ 1
- ii) $\left(\frac{1}{3}\right)^{-5} = \left(\frac{3}{1}\right)^5$ $\frac{1}{2}$
 $= 3 \times 3 \times 3 \times 3 \times 3$
 $= 243$ $\frac{1}{2}$
22. $7x - 9 = 4x + 15$
 $7x - 4x = 15 + 9$ 1
 $x = \frac{24}{3}$ $\frac{1}{2}$
 $x = 8$ $\frac{1}{2}$

OR

$$\frac{3}{7} + x = \frac{17}{14}$$

$$x = \frac{17}{14} - \frac{6}{14} \quad \frac{1}{2}$$

$$x = \frac{17-6}{14} \quad 1$$

$$x = \frac{11}{14} \quad \frac{1}{2}$$

$$\begin{aligned} 23. \quad (2pq + 3q^2)(3pq - 2q^2) &= 2pq(3pq - 2q^2) + 3q^2(3pq - 2q^2) & 1 \\ &= 6p^2q^2 - 4pq^3 + 9pq^3 - 6q^4 & \frac{1}{2} \\ &= 6p^2q^2 + 5pq^3 - 6q^4 & \frac{1}{2} \end{aligned}$$

$$\begin{aligned} 24. \quad x + 50^\circ + 68^\circ + 115^\circ &= 360^\circ & 1 \\ x &= 360^\circ - 233^\circ & \frac{1}{2} \\ x &= 127^\circ & \frac{1}{2} \end{aligned}$$

OR

$$\begin{aligned} 3x + 2x &= 180^\circ & 1 \\ 5x &= 180^\circ \\ x &= 36 \end{aligned}$$

$$\text{One angle} = 108^\circ \quad \frac{1}{2}$$

$$\text{Second angle} = 72^\circ \quad \frac{1}{2}$$

$$\begin{aligned} 25. \quad \frac{6}{840} &= \frac{5}{x} \quad \text{----- For Table} & 1 \\ x &= \frac{5 \times 840}{6} & \frac{1}{2} \\ x &= 700 & \frac{1}{2} \end{aligned}$$

SECTION C

$$\begin{aligned} 26. \quad \left(\frac{5}{3}\right)^{8x} &= \left(\frac{5}{3}\right)^{-5} \times \left(\frac{5}{3}\right)^{-11} \\ \left(\frac{5}{3}\right)^{8x} &= \left(\frac{5}{3}\right)^{-5-11} & \frac{1}{2} \\ &= \left(\frac{5}{3}\right)^{-16} & \frac{1}{2} \\ 8x &= -16 & 1 \\ x &= -2 & \frac{1}{2} + \frac{1}{2} \end{aligned}$$

OR

$$\text{Standard form} = \text{(I)} \quad 5.83 \times 10^4 \quad 1$$

$$\text{(II)} \quad 4.47 \times 10^6 \quad 1$$

$$\text{(III)} \quad 2.34 \times 10^5 \quad 1$$

$$27. \quad 5x + 8x = 182 \quad \frac{1}{2} + \frac{1}{2}$$

$$x = \left(\frac{182}{13}\right) \quad \frac{1}{2}$$

$$x = 14 \quad \frac{1}{2}$$

$$\therefore \text{One number} = 70, \quad \frac{1}{2}$$

$$\text{Second number} = 112 \quad \frac{1}{2}$$

$$28. \quad \text{Total Sector} = 5 \quad 1$$

$$P(\text{Green Sector}) = \left(\frac{3}{5}\right) \quad 1$$

$$P(\text{Non-Blue Sector}) = \left(\frac{4}{5}\right) \quad 1$$

$$29. \quad 40lm - 12ln + 8l^2 - (3l^2 - 12lm + 15ln) \quad 1$$

$$40lm - 12ln + 8l^2 - 3l^2 + 12lm - 15ln \quad 1$$

$$52lm - 27ln + 5l^2 \quad 1$$

OR

$$\begin{aligned} ac - ad + bc - bd + ac + ad - bc - bd + 2ac + 2bd & 1 \\ 2ac + 2ac - 2bd + 2bd & 1 \\ 4ac & 1 \end{aligned}$$

30. Polygon is Pentagon

$$\begin{aligned} 180^\circ - 70^\circ &= 110^\circ \text{ ---- Linear Pair} & \frac{1}{2} \\ 180^\circ - 60^\circ &= 120^\circ & \frac{1}{2} \\ 110^\circ + 120^\circ + 30^\circ + x + x &= 540 & \frac{1}{2} \\ 2x &= 540 - 260 & \frac{1}{2} \\ x &= 140^\circ & \frac{1}{2} + \frac{1}{2} \end{aligned}$$

31.

No. of Animals	No. of days
20	6
30	x

1

$$20 \times 6 = 30 \times x \quad \frac{1}{2}$$

$$x = \left(\frac{20 \times 6}{30} \right) \quad \frac{1}{2}$$

$$x = 4 \text{ days} \quad 1$$

32. $\left(\frac{3 \times 4}{5 \times 4} \right) = \left(\frac{12}{20} \right) \quad \frac{1}{2}$

$$\left(\frac{3 \times 5}{4 \times 5} \right) = \left(\frac{15}{20} \right) \quad \frac{1}{2}$$

$$\left(\frac{12 \times 5}{20 \times 5} \right) = \frac{60}{100} \quad 1$$

$$\left(\frac{15 \times 5}{20 \times 5} \right) = \left(\frac{75}{100} \right) \quad 1$$

$$\therefore \left(\frac{61}{100} \right), \left(\frac{62}{100} \right), \left(\frac{63}{100} \right), \left(\frac{64}{100} \right), \left(\frac{65}{100} \right), \left(\frac{66}{100} \right), \left(\frac{67}{100} \right), \left(\frac{68}{100} \right), \left(\frac{69}{100} \right), \left(\frac{70}{100} \right) \quad 2$$

33. $15z - 21 - 18z + 22 = 32z - 52 - 17 \quad 1\frac{1}{2}$

$$-15z - 18z - 32z = -52 - 17 + 21 - 22 \quad 1\frac{1}{2}$$

$$z = \left(\frac{70}{35} \right) \quad 1\frac{1}{2}$$

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

OR

$$15y - 60 - 2y + 5y + 18 + 30 = 0 \quad 1\frac{1}{2}$$

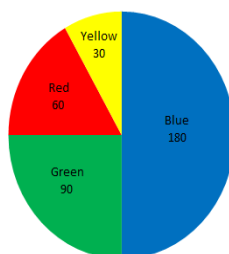
$$18y = 12 \quad 1\frac{1}{2}$$

$$y = \left(\frac{12}{18} \right) \quad 1$$

$$y = \left(\frac{2}{3} \right) \quad 1$$

34. Pie Chart

Central angles	
$\frac{1}{2} \times 360^\circ =$	180°
$\frac{1}{4} \times 360^\circ =$	90°
$\frac{1}{6} \times 360^\circ =$	60°
$\frac{1}{12} \times 360^\circ =$	30°



Pie chart- 3

Central angle - 2

35.

Sugar	2	5
Crystal	9×10^6	x

$1\frac{1}{2}$

$$\left(\frac{2}{9 \times 10^6}\right) = \left(\frac{5}{x}\right)$$

$\frac{1}{2}$

$$x = \left(\frac{5 \times 9 \times 10^6}{2}\right)$$

$\frac{1}{2}$

$$x = 22.5 \times 10^6$$

$\frac{1}{2}$

ii) $\left(\frac{2}{9 \times 10^6}\right) = \left(\frac{1.2}{x}\right)$

1

$$x = 5.4 \times 10^6$$

1

OR

No. of Persons	1800	x
No. of Days	40	24

1

$$x \times 24 = 1800 \times 40$$

1

$$x = \left(\frac{1800 \times 40}{24}\right)$$

$1\frac{1}{2}$

$$x = 3000$$

$1\frac{1}{2}$

36. Laddu = Rs 200

Jalebi = Rs 180

Barfi = Rs 150

Total = Rs 530

1

Rs 530 + 150 = Rs 680 he had

1

ii) Namkin = Rs 80

Potato = Rs 60

$\frac{1}{2}$

Total = Rs 140 , He can buy.

$\frac{1}{2}$

iii) Two cold drinks + 1 kg Barfi = Rs 400

1

37. Total coin = $50 + 48 + 36 + 28 + 8 = 170$

1

P (getting Rs 5 coin) = $\frac{36}{170}$

1

ii) P (getting Rs 20 coin) = $\frac{8}{170}$

2

- | | |
|---|---|
| 38. I) Write terms = $2x y$, $100 x y$, xy , $8 xy$ | 1 |
| ii) $100 y$ | 1 |
| iii) $111xy$ | 2 |
