B.K. BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
A CBSE DAY-CUM-BOYS' RESIDENTIAL SCHOOL

PERIODIC TEST-1 (2025-26)
MATHEMATICS
MARKING SCHEME

Class: VIII **Time: 1 hr.**
Date: 02.07.25 **Max Marks: 25**

A. Choose the correct answer: **1 x 5 = 5**

1. If x and y varies inversely as each other and x = 4 when y = 16. Find y when x = 8.
   a) 6 b) 8 c) 4 d) none of these

2. $(4^{-1} + 6^{-1} + 8^{-1})^0$ is equal to
   a) 1 b) 5 c) 3 d) 2

3. 12 76 00 00 00 000 is equal to
   a) 1.276×10^{11} b) 1.276×10^{10} c) 1.276×10^{12} d) 1.276×10^{8}

4. If x and y are in direct proportion, then which of the following is correct?
   a) $x + y$ = constant b) $x - y$ = constant c) $x \times y$ = constant d) $\frac{x}{y}$ = constant.

5. If the cost of 20 books is ₹ 120 , then the cost of 40 books is
   a) ₹ 190 b) ₹ 200 c) ₹ 198 d) ₹ 240

B. SOLVE THE FOLLOWING : **2 x 4 = 8**

6. Simply and write in exponential form:

(i) $5^3 \times 5^7 \div 5^{-2}$

$= 5^{3+7} \div 5^{-2}$

$= 5^{10} \div 5^{-2}$

$= 5^{10-(-2)}$

$= 5^{10+2} = 5^{12}$

(ii) $(2^8 \div 2^5)^5 \times 2^{-5}$

$= (2^{8-5})^5 \times 2^{-5}$

$= (2^3)^5 \times 2^{-5}$

$= 2^{15} \times 2^{-5}$

$= 2^{15+(-5)}$

$= 2^{15-5} = 2^{10}$

7. A farmer has enough food to feed 40 animals in his cattle for 5 days. How long would the food last if there were 10 more animals in his cattle?

Animals	40	40+10 = 50

Days	5	x

$50 \times x = 5 \times 40$

$$x = \frac{5 \times 40}{50}$$

$x = 4$ days.

8. Find the value of **m** for which (i) $5^{m} \div 5^{-3} = 5^{5}$ (ii) $(-3)^{m+1} \times (-3)^{5} = (-3)^{7}$

$5^{m} \div 5^{-3} = 5^{5}$

$5^{m+3} = 5^{5}$

$m + 3 = 5$

$m = 5 - 3$

$m = 2$

$(-3)^{m+1+5} = (-3)^{7}$

$m + 6 = 7$

$m = 7 - 6$

$m = 1$

9. Express in usual form: a) 3.02×10^{-6} b) 4.5×10^{4}

$3.02 \times 10^{-6} = \frac{3.02}{10^{6}}$

$= \frac{3.02}{100\ 00\ 00}$

$= 0.00000302$

$= 4.5 \times 10000$

$= 45{,}000$

C. Do as directed : **3 x 4 = 12**

10. A loaded truck travels 10 km in 20 minutes. If the speed remains the same, how far can it travel in 5 hours.

5 hours = 300 minutes

Distance (Km)	10	x
Time (min)	20	300

$$\frac{10}{20} = \frac{x}{300}$$

$x = 150$ km

11. A batch of bottles were packed in 25 boxes with 12 bottles in each box. If the same batch is packed using 20 bottles in each box , how many boxes would be filled ?

No of boxes	25	x

Bottles	12	20

$$25 \times 12 = x \times 20$$

$$x = \frac{12 \times 25}{20}$$

$$x = 15$$

12. Express in standard form:
    a) 0.00 00 00 00 00 063
    b) 5 02 00 000
    c) 87 66 00 00 000

a) 6.3×10^{-12}
b) 5.02×10^{7}
c) 8.766×10^{10}

13. Find the value of : $\left(\frac{3}{2}\right)^{-2} + \left(\frac{1}{3}\right)^{-1} + \left(\frac{3}{1}\right)^{-2}$

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$$\left(\frac{2}{3}\right)^{2} + \left(\frac{3}{1}\right)^{1} + \left(\frac{1}{3}\right)^{2}$$

$$= \frac{4}{9} + \frac{3}{1} + \frac{1}{9}$$

$$= \frac{4}{9} + \frac{27}{9} + \frac{1}{9}$$

$$= \frac{4+27+1}{9}$$

$$= \frac{32}{9}$$

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