

**Kendriya Vidyalaya Porbandar**  
**PT II (2022-23)**  
**Class -VIII**  
**Sub: Maths**

**Time: 2:30 Hrs.**

**MM: 60**

**General Instruction**

1. All questions are compulsory.
2. Section A consists of 13 MCQ of 1 mark each.
3. Section B consists of 7 Question of 2 marks each.
4. Section C consists of 5 Question of 3 marks each.
5. Section D consist of 2 Questions of 4 marks each and 2 Questions of 5 marks each.
6. Attempt all questions of a section together.

**SECTION A**

1. The value of  $x^2 - 2yx + y^2$  when  $x = 1, y = 2$  is  
(a) 1 (b) -1  
(c) 2 (d) -2
2. Which of the following is a monomial ?  
(a)  $4x^2$  (b)  $a + 6$   
(c)  $a + 6 + c$  (d)  $a + b + c + d$ .
3. How many terms are there in the expression  $7x^2 + 5x - 5$  ?  
(a) 1 (b) 2  
(c) 3 (d) 5
4. The value of  $3^5 \div 3^{-6}$  is  
(a)  $3^5$  (b)  $3^{-6}$   
(c)  $3^{11}$  (d)  $3^{-11}$
4. The like terms of the following are  
(a)  $x, 4x$  (b)  $4x, 2y$   
(c)  $2y, xy$  (d)  $3x, 2y$
5. The area of a parallelogram of base  $b$  and altitude  $h$  is  
(a)  $1/2bh$  (b)  $bh$   
(c)  $1/3bh$  (d)  $1/4bh$ .
6.  $1 \text{ m}^3 =$   
(a)  $1000000 \text{ cm}^3$  (b)  $100 \text{ cm}^3$   
(c)  $10 \text{ cm}^3$  (d)  $1/1000 \text{ cm}^3$
7.  $a^m \times b^m$  is equal to  
(a)  $ab^{m+m}$  (b)  $(ab)^m$   
(c)  $a^{mn}$  (d)  $a^m + b^m$
8. In  $3^2$ , the exponent is  
(a) 1 (b) 2  
(c) 3 (d) 6

9. The surface area of a cuboid of length  $l$ , breadth  $b$  and height  $h$  is

- (a)  $lbh$  (b)  $lb + bh + hl$   
(c)  $2(lb + bh + hl)$  (d)  $2(l + b)h$ .

Q10 If marked price of an article is Rs. 1200 and the discount is 12%, then the selling price of the article is

- (a) Rs. 1056 (b) Rs. 1344 (c) Rs. 1212 (d) Rs. 1188

11. Point  $(-3, 5)$  lies in the

- (a) first quadrant (b) second quadrant (c) third quadrant (d) fourth quadrant

12. A point which lies on both the axis is \_\_\_\_\_

- (a)  $(0, 0)$  (b)  $(0, 1)$  (c)  $(1, 0)$  (d)  $(1, 1)$

13. A truck needs 54 litres of diesel for covering a distance of 297 km. The diesel required by the truck to cover a distance of 550 km is

- (a) 100 litres (b) 50 litres (c) 25.16 litres (d) 25 litres

### SECTION B

Q1. Find the value of

$$(3^0 + 9^{-1}) \times 3^2$$

Q2. A flooring tile has the shape of a parallelogram whose base is 24 cm and the corresponding height is 10 cm. How many such tiles are required to cover a floor of area  $1080 \text{ m}^2$ ?

Q3. The area of a trapezium is  $34 \text{ cm}^2$  and the length of one of the parallel sides is 10 cm and its height is 4 cm. Find the length of the other parallel sides.

Q4. Use the identity  $(x + a)(x + b) = x^2 + (a + b)x + ab$  to find the product

$$(2x + 5)(2x + 1)$$

Q5. Add the following:

$$5p^2q^2 - 4pq + 10, 5 + 7pq - 3p^2q^2$$

Q6. A sum of Rs. 10, 000 is borrowed at a rate of interest 15% per annum for 2 years. Find the simple interest on this sum and the amount to be paid at the end of two years.

Q7. Plot the following points on a graph sheet. Verify if they lie on a line

- (a)  $A(4, 0)$ ,  $B(4, 2)$ ,  $C(4, 6)$ ,  $D(4, 2.5)$

- (b)  $P(1, 1)$ ,  $Q(2, 2)$ ,  $R(3, 3)$ ,  $S(4, 4)$

Q8. A photograph of a bacteria enlarged 50,000 times attains a length of 5 cm, as shown in the diagram. What is the actual length of the bacteria? If the photograph is enlarged 20,000 times only, what would be its enlarged length?

## SECTION C

Q1. Daniel is painting the walls and ceiling of a cuboidal hall with length, breadth and height of 15 m, 10 m and 7 m respectively. From each can of paint 100 m<sup>2</sup> of the area is painted. How many cans of paint will she need to paint the room?

Q2. A cuboid is of dimensions 60 cm × 54 cm × 30 cm. How many small cubes with side 6 cm can be placed in the given cuboid?

Q3. Simplify:

(i)  $(3x + 5)^2 - (3x - 5)^2$

(ii) Express in standard form

0.0000000085

Q4. Simplify

$$\frac{25 \times t^{-4}}{5^{-3} \times 10 \times t^{-8}} \quad (t \neq 0)$$

Q5 Factorise the following expressions.

$$25m^2 + 30m + 9$$

Q6 Find the common factors of the given terms.

$$6abc, 24ab^2, 12a^2b$$

## SECTION D

Q1. Two entrepreneurs Madhav and Meena decided to start their innovation centers. Madhav excelled in data interpretation. Whereas Meena is good at automobile engineering. As per the plans they needed two rectangular plots for designing their centre. One for the workshop and A landowner, from the nearby locality offered his square shaped land of area 9216 m<sup>2</sup> at the rate of Rs 60 per m<sup>2</sup>.



Answer the following questions

(1) As they both needed equal space. What could be the width of the rectangular plots

(2) If Meena plans to get square shaped part of the plot of length 74m. What will be the Area left for Madhav's office .

## Q2. INCOME TAX SLABS & RATES FOR CURRENT FY 2019-20 (AY 2020-21)

Net Income Slab (Gross Taxable Income - deductions)	Income Tax Rate	Surcharge	Health & Education Cess	Rebate u/s 87A (FY 2019-20)
Upto 2,50,000	Nil	Nil	Nil	Nil
From 2,50,001-5,00,000	5% of income above 2,50,000	Nil	4%	For income upto Rs 5 lakhs Tax Rebate upto Rs 12,500
From 5,00,001-10,00,000	12,500 + 20% income above 5,00,000	Nil	4%	Nil
From 10,00,001-50,00,000	1,12,500/- + 30% income above 10,00,000	Nil	4%	Nil
From 50,00,001-1,00,00,000	13,12,500 + 30% income above,50,00,000	10%	4%	Nil
Above 1,00,00,000 but upto 2,00,00,000	28,12,500 + 30% income above 1,00,00,000	15%	4%	Nil
Above 2,00,00,000 but upto 5,00,00,000	58,12,500 + 30% income above 2,00,00,000	25%	4%	Nil
Above 5,00,00,000	1,48,12,500 + 30% income above 5,00,00,000	37%	4%	Nil

(a) What is the net income tax payable if the Taxable income is Rs6,00,000?

- (i) Rs.32500      (ii) Rs 120000      (iii) Rs.20000      (iv). Nil

(b). What is the health and education cess applicable if taxable income is Rs 55,56,000

(i). 37%                      (ii). Nil                      (iii). 4%                      (iv). 25%

© What is the surcharge applicable if Taxable income is Rs15,99,

(i). 37%                      (ii). Nil                      (iii). 4%                      (iii). 25%

(d). If income tax is Rs 32,500 then educational cess is:

(i). Rs1300                      (ii). Nil                      (iii). Rs 1000                      (iv). Rs 1100

Q3. Nandini and Bhumi are very good friends. They decided to play a game. Nandini asked Bhumi to think of a number and subtract 23 from it. Then she asked to multiply the result by 6 again, she asked to add 8 in the result. Now Bhumi said, "The number I obtained is 7 times the same number I thought of."

(a). Write the equation to find the number that Bhumi thought of. Also find the number.

(b). What would be the number if Bhumi subtracts 32 instead of 23?

(c). What is the difference between both the results?

(d). What will be the result, when the original number is multiplied with the square of the difference obtained in Q3?

Q4. The villagers planned to construct a community place to hold panchayat samiti meeting in the village. The place has 14 cylindrical pillars. Each has a base of radius 50 cm and height 10 cm. Floor and roof are cuboids having dimensions 10m X 10m X 25cm. The contractor said that the rate of construction of roof and floor is 60 rs per m<sup>3</sup> and the rate of painting is 20 rs per m<sup>2</sup>.

(a) The total surface area of all the pillars which need to be painted

(b) The cost of painting the pillars

(c) the volume of the roof and the floor is

(d) The cost of constructing the floor and roof