

**O. P. JINDAL SCHOOL, SAVITRI NAGAR**  
**Annual Examination - (2023 – 2024)**

**Class: VIII**  
**Subject: Mathematics**  
 Name: \_\_\_\_\_

**MM: 80**  
**Time: 3Hrs.**  
 Roll No.: \_\_\_\_\_

**(Fifteen Minutes Extra will be given for reading the Question Paper.)**

**General Instructions:**

- i. This question paper contains 44 questions. All questions are compulsory.
- ii. This question paper is divided into 4 sections – Sections A, B, C and D.
- iii. Section A comprises 20 questions (Q. no.1 to 20) of 1 mark each.
- iv. Section B comprises 8 questions (Q. no.21 to 28) of 2 marks each.
- v. Section C comprises 8 questions (Q. no.29 to 36) of 3 marks each.
- vi. Section D comprises 4 questions (Q. no.37 to 40) of 4 marks each. There is case-study based question (Q.no.41 to 44) of 1 mark each.
- vii. There is no overall choice. However an internal choice has been provided. You have to attempt only one of the alternatives in all such questions.
- viii. Use of calculator is not allowed.

**SECTION A**

**Choose the correct option:**

- Q1.** The value of:  $\sqrt[3]{81} \times \sqrt[3]{9}$
- a) 3                      b) 27                      c) 9                      d) none of these
- Q2.** The volume of a cuboid is  $600 \text{ cm}^3$  and the area of its base is  $100 \text{ cm}^2$ . Find its height.
- a) 60 cm                      b) 6 cm                      c) 10 cm                      d) none of these
- Q3.**  $442\% = ?$
- a) 4.42                      b) 44.2                      c) 0.442                      d) none of these
- Q4.** What is the interest on ₹ 1000 at the rate of 5% per annum for 1 year?
- a) ₹ 1000                      b) ₹ 500                      c) ₹ 100                      d) ₹ 50
- Q5.** \_\_\_\_\_ is a solid which has one vertex only.
- a) Cylinder                      b) Cone                      c) Prism                      d) Cuboid
- Q6.** Find the product of  $-5x^2$  and  $7x^5$ .
- a)  $-35x^7$                       b)  $35x^{10}$                       c)  $35x^7$                       d) none of these
- Q7.** What are the shapes of lateral faces of rectangular prism?
- a) Square                      b) Circular                      c) Rectangular                      d) none of these

- Q8.** If a polyhedron has 30 edges and 20 vertices, how many faces does it have?  
a) 28                      b) 10                      c) 50                      d) 12
- Q9.** How many vertices are there in hexagonal prism?  
a) 12                      b) 10                      c) 14                      d) 18
- Q10.** Find the value of: 10% of ₹500  
a) ₹5000                      b) ₹50                      c) ₹100                      d) ₹5
- Q11.** The coefficient of z in  $-3zx^2$  is:  
a)  $-3z$                       b)  $3x^2$                       c)  $x^2$                       d)  $-3x^2$
- Q12.** Number of faces in tetrahedron are:  
a) 1                      b) 2                      c) 5                      d) 4
- Q13.** Find the surface area of a cube whose edge is 11 cm.  
a)  $121\text{cm}^2$                       b)  $66\text{cm}^2$                       c)  $726\text{cm}^2$                       d) none of these
- Q14.** Find the cube of 13.  
a) 1331                      b) 2197                      c) 1728                      d) none of these
- Q15.** The cost of a book is ₹125. Find the cost of 3 books of the same type.  
a) ₹375                      b) ₹300                      c) ₹250                      d) ₹500
- Q16.** Find the lateral surface area of a cuboid whose length, breadth and height are 20 cm, 10 cm and 40 cm respectively.  
a)  $1400\text{ cm}^2$                       b)  $2400\text{ cm}^2$                       c)  $2800\text{ cm}^2$                       d) none of these
- Q17.** Find the area of trapezium whose parallel sides are 9 cm and 15 cm and the distance between them is 8 cm.  
a)  $24\text{ cm}^2$                       b)  $96\text{ cm}^2$                       c)  $135\text{ cm}^2$                       d) none of these
- Q18.** Common greatest factor of:  $3x + 21$   
a) 3                      b) x                      c)  $3x$                       d) 21

**Directions:** In the following questions a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

- a) Both assertion (A) and reason (R) are true and reason (R) is correct explanation of assertion (A).  
b) Both assertion (A) and reason (R) are true and reason (R) is not the correct explanation of assertion (A).  
c) Assertion(A) is true but reason (R) is false.  
d) Assertion(A) is false but reason (R) is true.

**Q19. Assertion(A)** – 10 metres of cloth cost ₹1000. 4 metres costs ₹400.

**Reason(R)** – A direct proportion shows the direct the relation between two quantities.

**Q20. Assertion(A)** – The common factor of  $x^3y^2$  and  $x^4y$  is  $x^3y$ .

**Reason(R)** – The factorization is defined as expressing or decomposing a number or an algebraic expression as a product of its prime factors or irreducible factors.

### SECTION B

**Answer the following questions:**

**Q21.** Find the area of a circular ring whose external and internal radii are 21 cm and 14 cm respectively.

**OR**

Find the area of square whose perimeter is 44 cm.

**Q22.** What is the smallest number by which 17496 must be multiplied to obtain a perfect cube?

**Q23.** The marked price of a book is ₹65. It is sold at a discount of 15%. Find the selling price of the book.

**OR**

A person sells an article for ₹80, gaining ₹16. Find his gain percent.

**Q24.** Verify Euler's formula for square pyramid.

**Q25.** Find edge of a cube whose lateral surface area is  $256 \text{ cm}^2$ .

**Q26.** Find the value of a and b in the following table, given that x and y are in direct proportion.

X	6	15	b
Y	10	a	47.5

**Q27.** Factorise:  $x^2 + xy + xz + yz$

**Q28.** Find the product:  $2x^2(5x + 3y)$

**OR**

If  $x = -1$  and  $y = 0$ , then find the value of  $x^2 - 2xy + y^2$ .

### SECTION C

**Q29.** A pole 18 m high casts a shadow of 12 m. At the same time if the length of shadow of a tree is 4m, then find the height of the tree.

**Q30.** Write the quadrant/axis of the following points.

A(-4, -5)      B(2.5, -8)      C(0, 1)

**Q31.** Find the factors of  $x^2 + 9x + 20$ .

**OR**

Factorise:  $9p^5 - p^3q^2$

**Q32.** Find the cube root of 4096 by prime factorization.

**Q33.** Mallica purchased a washing machine for ₹ 29500 including GST at 18%. What is the original price of the washing machine?

**Q34.** What must be subtracted from  $8x^3 + 7x^2y - 3xy^2 - y^3$  to get  $7xy^2 - y^3 - 3x^2y + 5x^3$ ?

**OR**

Find the value of the expression, when  $x = 2$  and  $y = -1$

$$4x^2 + 12xy + 9y^2$$

**Q35.** The area of a trapezium is  $180 \text{ cm}^2$ . Its parallel sides are in the ratio 1 : 2 and the distance between them is 12 cm. Find the length of each of the parallel sides.

**Q36.** Find the capacity (in litres) of a cylindrical storage tank of height 1.2 m and base diameter 35 cm.

**OR**

Four cubes each of side 3 cm are joined end to end. Find the surface area of the resulting cuboid.

**SECTION D**

**Q37.** The following table gives the quantity of sugar and its cost. Plot the graph to show the data.

Sugar( in kg )	2	5	8	9	11
Cost ( in ₹ )	70	175	280	315	385

**Q38.** Multiply and verify the result when  $x = 3$  and  $y = 1$ .

$$(x - 2y)(3x^2 + 2xy - y^2)$$

**OR**

Evaluate by using identities: (i)  $103 \times 107$       (ii)  $(102)^2$

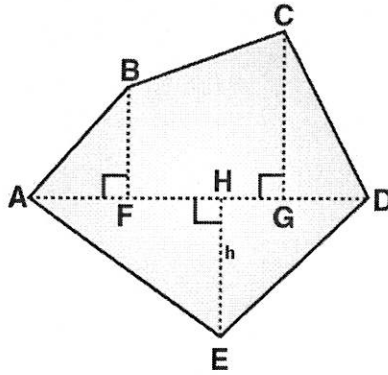
**Q39.** Find the difference between the compound interest on ₹ 160000 for 1 year at 20% per annum when compounded half yearly and quarterly.

**OR**

Raymond sold an article at a loss of 5%. If he had sold it for ₹ 270 more, he would have gained 7%. Find the cost price of the article.

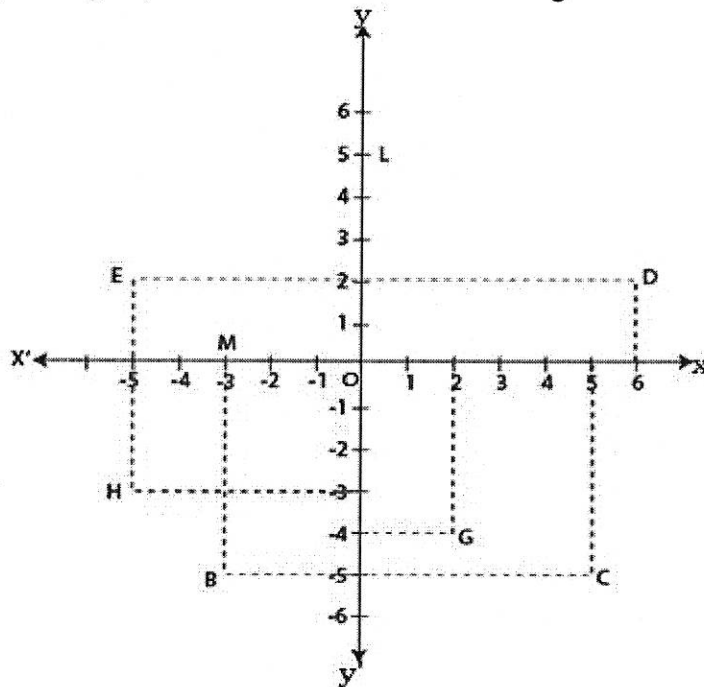
**Q40.** Find the area of the pentagon shown in figure, if  $AD = 10$  cm,  $AG = 8$  cm,  $AH = 6$  cm,

$AF = 5$  cm,  $BF = 5$  cm,  $CG = 7$  cm and  $EH = 3$  cm.



**Case – study based question:**

From the given figure, find the answer of the following.



**Q41.** Find the abscissa of point B.

- a) -5                      b) -3                      c) 0                      d) none of these

**Q42.** The point identified by the coordinates (6, 2)

- a) G                      b) B                      c) E                      d) D

**Q43.** Coordinates of point M,

- a) (3, 0)                      b) (0, 3)                      c) (-3, 0)                      d) (0, -3)

**Q44.** Quadrants of point G and B are,

- a) 1<sup>st</sup> and 3<sup>rd</sup>                      b) 2<sup>nd</sup> and 4<sup>th</sup>                      c) 3<sup>rd</sup> and 2<sup>nd</sup>                      d) 4<sup>th</sup> and 3<sup>rd</sup>