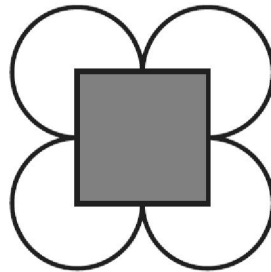


**General Instructions:**

- (i). All questions are compulsory.
- (ii). This question paper contains **30** questions divided into four Sections A, B, C and D.
- (iii). **Section A** comprises of 6 questions of **1 mark** each. **Section B** comprises of 6 questions of **2 marks** each. **Section C** comprises of 10 questions of **3 marks** each and **Section D** comprises of 8 questions of **4 marks** each.
- (iv). Use of Calculators is not permitted

**SECTION – A**

1. If  $p = -2$ , find the value of  $-4p + 7$
2. Express 512 using exponential notation.
3. Simplify:  $(-4)^3$
4. Find the area of a circle of radius 30 cm (use  $\pi = 3.14$ ).
5. What cross-sections do you get when you give a horizontal cut to the circular pipe?
6. Find the number of lines of symmetry of the given figure:



**SECTION – B**

7. Find the whole quantity if 5% of it is 600.
8. Draw a rough sketch of a quadrilateral with a rotational symmetry of order more than 1 but not line symmetry.
9. Simplify and write the answer in the exponential form:  $[(2^2)^3 \times 3^6] \times 5^6$
10. If two cubes of dimensions 2 cm by 2cm by 2cm are placed side by side, what would the dimensions of the resulting cuboid be?
11. What cross-sections do you get when you give a (i) vertical cut (ii) horizontal cut to the following solids? (a) A brick (b) A round apple
12. The circumference of a circle is 31.4 cm. Find the radius and the area of the circle? (Take  $\pi = 3.14$ )

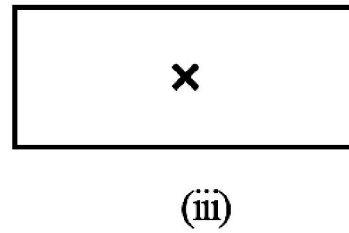
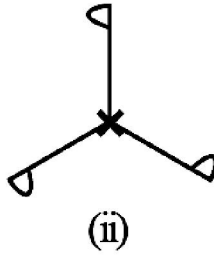
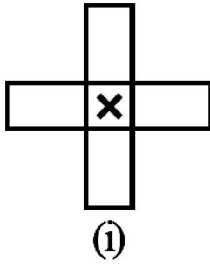
**SECTION – C**

13. Simplify:  $\frac{(2^5)^2 \times 7^3}{8^3 \times 7}$

14. If Rs 250 is to be divided amongst Ravi, Raju and Roy, so that Ravi gets two parts, Raju three parts and Roy five parts. How much money will each get? What will it be in percentages?

15. Find any three rational numbers between  $\frac{-5}{6}$  and  $\frac{5}{8}$

16. Give the order of the rotational symmetry of the given figures about the point marked x.



17. Add:

(i)  $14x + 10y - 12xy - 13$ ,  $18 - 7x - 10y + 8xy$ ,  $4xy$

(ii)  $5m - 7n$ ,  $3n - 4m + 2$ ,  $2m - 3mn - 5$

18. When  $a = 0$ ,  $b = -1$ , find the value of the given expressions: (i)  $2a^2b + 2ab^2 + ab$  (ii)  $a^2 + ab + 2$

19. Construct the right angled  $\Delta PQR$ , where  $m\angle Q = 90^\circ$ ,  $QR = 8\text{cm}$  and  $PR = 10\text{ cm}$ .

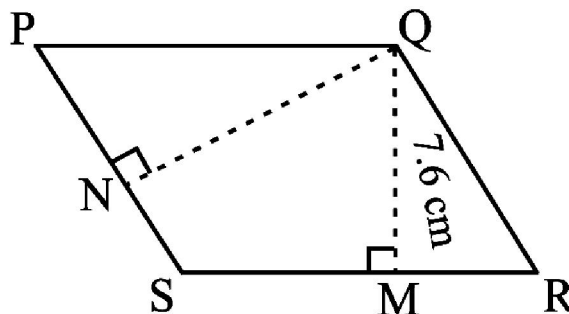
20. Draw a line  $l$ . Draw a perpendicular to  $l$  at any point on  $l$ . On this perpendicular choose a point  $X$ , 4 cm away from  $l$ . Through  $X$ , draw a line  $m$  parallel to  $l$ .

21. A path 1 m wide is built along the border and inside a square garden of side 30 m. Find:

(i) the area of the path

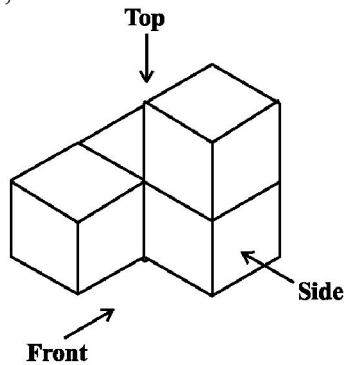
(ii) the cost of planting grass in the remaining portion of the garden at the rate of Rs 40 per  $\text{m}^2$ .

22. PQRS is a parallelogram (see the below). QM is the height from Q to SR and QN is the height from Q to PS. If  $SR = 12\text{ cm}$  and  $QM = 7.6\text{ cm}$ . Find: (a) the area of the parallelogram PQRS (b) QN, if  $PS = 8\text{ cm}$



**SECTION – D**

23. Anita takes a loan of Rs 5,000 for donating books to the poor, at 15% per year as rate of interest. Find the interest she has to pay at end of three years. What value depicted from this?
24. (a) From the sum of  $3x - y + 11$  and  $-y - 11$ , subtract  $3x - y - 11$ .  
(b) What should be taken away from  $3x^2 - 4y^2 + 5xy + 20$  to obtain  $-x^2 - y^2 + 6xy + 20$ ?
25. Represent these numbers on the number line. (i)  $\frac{7}{4}$  (ii)  $-\frac{5}{6}$  (iii)  $\frac{4}{7}$  (iv)  $-\frac{6}{9}$
26. Construct  $\triangle ABC$ , given  $m\angle A = 60^\circ$ ,  $m\angle B = 30^\circ$  and  $AB = 5.8$  cm.
27. Two cross roads, each of width 5 m, run at right angles through the centre of a rectangular park of length 70 m and breadth 45 m and parallel to its sides. Find the area of the roads. Also find the cost of constructing the roads at the rate of Rs 105 per  $m^2$ .
28. For given solid, draw the top view, front view and side view.



29. What letters of the English alphabet have reflectional symmetry (i.e., symmetry related to mirror reflection) about.
- (a) a vertical mirror  
(b) a horizontal mirror  
(c) both horizontal and vertical mirrors
30. Express the number appearing in the following statements in standard form.
- (a) The distance between Earth and Moon is 384,000,000 m.  
(b) Speed of light in vacuum is 300,000,000 m/s.  
(c) Diameter of the Earth is 1,27,56,000 m.  
(d) Diameter of the Sun is 1,40,00,00,000 m.
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