



DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
ANNUAL EXAMINATION (2017-18)

Class:- VII
Time- 2 ½ Hrs.

Subject:- Mathematics
F. M:- 80

Attempt all questions. However there are internal choices. Omission of steps result in omission of marks. Do the rough work at the right side of margin.

Section – A

(1 x 4 = 4)

1. In a class of 50 students, 8% were absent on one day. Find the number of students present on that day.
2. Convert 1 hectare into cm^2 .
3. Find : $(5^7 \div 5^6)^2$
4. Draw a geometrical figure having rotational symmetry. Write its order and degree of rotation.

Section – B

(2 x 6 = 12)

5. In a right angled triangle ABC, if $\angle B = 90^\circ$, $BC = 3\text{cm}$ and $AC = 5\text{cm}$, then find the length of side AB.
6. (a) What ratio is equal to 225% ?
(b) What percent is equal to 5.2 ?
7. What percent is 25ml of 5 litres ?
8. A table top is semicircular in shape with diameter 2.8m. Find the area of this tabletop.
9. The length of a side of square is $2x + 3$. Write the expression for perimeter of the square.
10. Express 648 in exponential notation.

Section – C

(3 x 8 = 24)

11. Two angles are making a linear pair. If one of them is one-third of the other, find the angles.
12. Each of the two equal angles of an isosceles triangle is four times the third angle. Find the angles of the triangle.
13. A body floats $\frac{2}{9}$ of its volume above the surface. What is the ratio of the body's submerged volume to its exposed volume ? Rewrite it as a rational number.
14. Draw a triangle ABC with $\angle C$ a right angle, $AB = 6.2\text{cm}$ and $BC = 4.5\text{cm}$. Write the steps of construction.
15. Circumference of a circle is 33cm. Find its area.
16. (a) Subtract $2(ab + bc + ca)$ from $-ab - bc - ca$.

OR

- (b) Subtract the sum of $-3x^3y^2 + 2x^2y^3$ and $-3x^2y^3 - 5y^4$ from $x^4 + x^3y^2 + x^2y^3 + y^4$.

17. Evaluate : (a) $\frac{7^8 \times a^{10} b^7 c^{12}}{7^6 \times a^8 b^4 c^{12}}$

OR

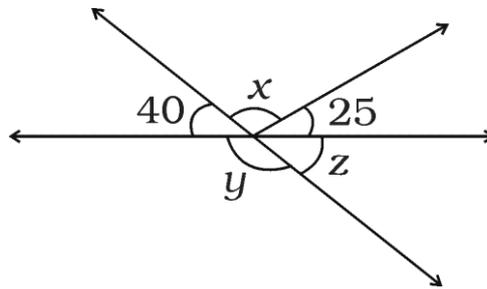
(b) $\frac{6^4 \times 9^2 \times 25^3}{3^2 \times 4^2 \times 15^6}$

18. Write two alphabets having rotational symmetry and two alphabets having 2 lines of symmetry. Also write two alphabets having no symmetry.

Section – D

(4 x 10 = 40)

19. Find the values of the angles x, y, z in the following figure :



20. A tree broke at a point but didn't separate. Its top touched the ground at a distance of 6 dm from its base. If the point where it broke be at a height of 2.5dm from the ground, what was the total height of the tree before it broke ?
21. (a) If Mahohar pays an interest of Rs. 750 for 2 years on a sum of Rs. 4500, find the rate of interest.

OR

- (b) Fatima donates Rs. 2000 to a school, the interest on which is to be used for awarding 5 scholarship of equal value every year. If the donator earns an interest of 10% per annum, find the value of each scholarship.
22. (a) Karim bought 150 dozen pencils at Rs. 10 a dozen. His overhead expenses were Rs. 100. He sold them at Rs. 1.20 each. What was his profit or loss percent ?

OR

- (b) S.P. of 10 articles is the same as the CP of 11 articles, find gain percent.
23. What should be subtracted from $\left(\frac{3}{4} - \frac{2}{3}\right)$ to get $\frac{-1}{6}$?
24. Construct ΔPQR if $PQ = 5\text{cm}$, $m\angle PQR = 105^\circ$ and $m\angle QRP = 40^\circ$, construct 105° with the help of compass. Write the steps of construction.

25. (a) Ramesh grew plants in a rectangular field that measured 32m long and 26m wide. This year he increased the area for plants by increasing the length but not the width. He increased the area of plantation by 650 sq.m. What is the length of the expanded field ? What moral value do you gather from Ramesh's work ?

OR

- (b) Priyanka took a wire and bent it to form a circle of radius 14cm. Then she bent it into a rectangle with one side 24cm long. What is the length of the wire ? Which figure encloses more area, the circle or the rectangle ?
26. (a) Two cross roads, each of width 5m 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 roads, Also find the cost of constructing the roads at the rate of Rs. 105 per m².

OR

- (b) Area of an isosceles triangle is 48cm². If the altitudes corresponding to the base of the triangle is 8cm; find the perimeter of the triangle.
27. If $A = 3x^2 - 4x + 1$, $B = 5x^2 + 3x - 8$ and $C = 4x^2 - 7x + 3$ then find $(A + B) - C$.
28. Simplify :

$$\frac{(16)^7 \times (25)^5 \times (81)^3}{(15)^7 \times (24)^5 \times (80)^3}$$

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