

SAMPLE PAPER, TERM – II
SESSION – 2019-20
MATHEMATICS
CLASS-VII

Time Allowed- 3 Hrs.

M.M. - 80

General Instructions:-

1. All questions are compulsory.
2. The question paper consist of 30 questions, divided into four Sections A, B, C and D.
3. Section A contains 6 questions of 1 mark each, Section B contains 6 questions of 2 marks each, Section C contains 10 questions of 3 marks each, Section D contains 8 questions of 4 marks each.
4. There is no overall choice.
5. However an internal choice has been provided in two questions of 2 marks each, four questions of 3 marks each and four questions of 4 marks each. You have to attempt only one alternative in such questions.

SECTION - A

(Each question carries 1 mark)

Choose the correct option :

1. Which of the following is the multiplicative inverse of $\frac{-3}{4}$? (1)
(i) $\frac{4}{-3}$ (ii) $\frac{8}{9}$ (iii) $\frac{-3}{-4}$ (iv) $\frac{3}{-4}$
2. The equation having 2 as a solution is : (1)
(i) $4x + 1 = 9$ (ii) $3 - x = 2$ (iii) $x - 5 = 3$ (iv) $3 + x = 8$
3. Which of the following rational numbers is positive ? (1)
(i) $\frac{-18}{7}$ (ii) $\frac{10}{-13}$ (iii) $\frac{-13}{-14}$ (iv) $\frac{-21}{13}$
4. Which of the following does not represent an integer ? (1)
(i) $0 \div (-7)$ (ii) $20 \div (-4)$ (iii) $(-9) \div 3$ (iv) $(-12) \div 5$
5. Coefficient of y^2 in $9xy^2$ is : (1)
(i) $9x$ (ii) $9xy$ (iii) $9x^2$ (iv) $-9y^2$
6. $[(-3)^4]^3$ is equal to : (1)
(i) $(-3)^{12}$ (ii) $(-3)^4$ (iii) $(-3)^7$ (iv) $(-3)^{23}$

SECTION - B

(Each question carries 2 marks)

7. Simplify the following : (2)
 $[(-6) \times (-3)] + (-4)$
8. What percent of 40 kg. is 440 g ? (2)
9. If one third of a number exceeds its one-fourth by 1. Find the number. (2)
10. Solve the following equation $\frac{5x}{3} + 3 = x + 7$ (2)
11. If area of a circle is 154 cm^2 . Find its circumference. (2)
12. Express the following as product of powers of their prime factors 504. (2)

SECTION - C

(Each question carries 3 marks)

13. Juhisells a washing machine for Rs. 13,500. She loses 20% in the bargain. What was the price at which she bought it? (3)

14. Subtract: (3)

(i) $5a^2 - 7ab + 5b^2$ from $3ab - 2a^2 - 2b^2$

(ii) $4pq - 5q^2 - 3p^2$ from $5p^2 + 3q^2 - pq$

15. The minute hand of a circular clock is 15 cm long. How far does the tip of the minute hand move in 1 hour. (Take $\pi = 3.14$) (3)

16. Find the value of the following expressions when $n = -2$. (3)

(i) $5n - 2$

(ii) $5n^2 + 5n - 2$

(iii) $n^3 + 5n^2 + 5n - 2$

17. Construct a triangle PQR, given that $PQ = 3$ cm, $QR = 5.5$ cm and $\angle PQR = 60^\circ$. (3)

OR

Construct $\triangle ABC$ such that $AB = 2.5$ cm, $BC = 6$ cm and $AC = 6.5$ cm. Measure $\angle B$.

18. The area of a square park is the same as of a rectangular park. If the side of the square park is 60 m and the length of the rectangular park is 90 m, find the breadth of the rectangular park. (3)

19. Anil deposited Rs. 20,000 for saving as a fixed deposit in a bank at 10% per annum. Find the amount he will get after 5 years. What are the benefits of savings? (3)

20. (a) What should be taken away from $3x^2 - 4y^2 + 5xy + 20$ to obtain $-x^2 - y^2 + 6xy + 20$?

(b) From the sum of $3x - y + 11$ and $-y - 11$, subtract $3x - y - 11$. (3)

21. Express the number appearing in the following statements in standard form. (3)

(a) The distance between Sun and Saturn is 1,433,500,000,000 ma

(b) Mass of Uranus = 86,800,000,000,000,000,000,000 Kg.

(c) The distance between Saturn and Uranus is 1,439,000,000,000 m

60,230,000,000,000,000,000,000 molecules are contained in a drop of water weighing 1.8 gm.

22. Three cubes each with 2 cm edge are placed side by side to form a cuboid. Sketch an oblique or isometric sketch of this cuboid. (3)

OR

Through a rectangular field of length 90 m and breadth 60 m, two roads are constructed which are parallel to the sides and cut each other at right angles through the centre of the fields. If the width of each road is 3 m, find

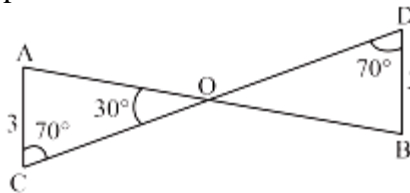
(i) the area covered by the roads.

(ii) the cost of constructing the roads at the rate of Rs. 110 perm².

SECTION - D

(Each question carries 4 marks)

23. By using the given figure, prove that $\triangle AOC \cong \triangle DOB$ and then after $OA = OB$. (4)



24. The speed of light in vacuum is 3×10^8 m/s. Sunlight takes about 8 minutes to reach the earth. Express distance of Sun from Earth in standard form. (4)

OR

Find the value of n, where n is an integer.

$$2^{n-5} \times 6^{2n-4} = \frac{1}{(12^4 \times 2)}$$

25. In a furniture shop, 24 tables were bought at the rate of Rs. 450 per table. The shopkeeper sold 16 of them at the rate Rs. 600 per table and the remaining at the rate of Rs. 400 per table. Find her gain or loss percent. (4)

OR

Medha deposited 20% of her money in a bank. After spending 20% of the remainder, she has Rs. 4800 left with her. How much did she originally have?

26. Construct a right-angled isosceles triangle with one side (other than hypotenuse) of length 4.5 cm. (4)

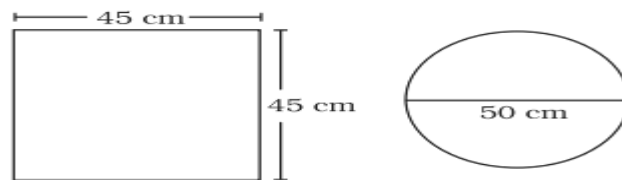
OR

Draw an isosceles triangle with each of equal sides of length 3 cm and the angle between them as 45° .

27. Taking $x = -\frac{4}{9}$, $y = \frac{5}{12}$ and $z = \frac{7}{18}$, and find : (4)

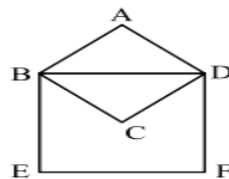
- (a) the rational number which when added to x gives y .
 (b) the rational number which subtracted from y gives z .

28. Pizza factory has come out with two kinds of pizzas. A square pizza of side 45 cm costs Rs. 150 and a circular pizza of diameter 50 cm costs Rs 160 . Which pizza is a better deal ? (4)



OR

In the given figure, ABCD is a square with AB = 15 cm. Find the area of the square BDFE.



29. Solve the following: (4)

- (a) Add: $t - t^2 - t^3 - 14$; $15t^3 + 13 + 9t - 8t^2$; $12t^2 - 19 - 24t$ and $4t - 9t^2 + 19t^3$
 (b) Subtract: $ab - bc - ca$ from $-ab + bc + ca$.

30. A rectangular shaped swimming pool with dimensions 30m \times 20m has 5 m wide cemented path along its length and 8 m wide path along its width (as shown in the figure). Find the cost of cementing the path at the rate of Rs 200 per m^2 . (4)

