GANIT PRABHUTWA EXAMINATION

Date : 10.12.2017   **Std - VIII**   Total Marks : 100

Time : 3 Hours

N.B. For Q. No. 2 to 7, proper procedure and explanation is necessary.

Q. 1 A) Choose the correct alternative and write it against the correct
sub-question number.   **10**

1) Ray PQ and ray PS are opposite rays. How many points are common to
the two rays ?

   A) 0   B) 1   C) 2   D) 3

2) What is the decimal form of $\dfrac{361}{90}$?

   A) $4.\overline{011}$ B) 4.01 C) $4.000\overline{1}$ D) $4.0\overline{1}$

3) The centre of the circle passing through all the three vertices of $\triangle PQR$
lies on the side PQ. What type of angle is $\angle P$?

   A) acute angle   B) obtuse angle

   C) right angle   D) can not be decided

4) A money lender charges Rs. 63 as interest for 6 months on Rs. 420.
What is the rate of interest p.c.p.a ?

   A) 33%   B) 13%   C) 30%   D) 10%

5) A shopkeeper sells an article for Rs. 240, and suffers a loss of 4%. What
should be the selling price of that article to gain a profit of 12%?

   A) 252   B) 236   C) 262   D) 280

6) What is the average of the numbers $7\dfrac{2}{3}$, $3\dfrac{1}{4}$, 0, 1, $\dfrac{1}{12}$?

   A) 4   B) 2.4   C) 3   D) 4.2

7) What should be added to $x^2 - 2x - 11$ so that the sum will be divisible by
$(x + 3)$ as well as by $(x - 5)$?

   A) 4   B) –4   C) 3   D) –3

8) If $2x = 3y$ and $5y = 6z$, find the ratio $x : z$.

   A) 1:3   B) 9:5   C) 5:9   D) 3:5

9) Area of a circle is 1386 sq.cm. Find its diameter. ($\pi = \dfrac{22}{7}$)

   A) 42 cm.   B) 21 cm.   C) 132 cm.   D) 84 cm.

10) If $81^x = \dfrac{1}{3}$ then find x.

    A) 4   B) -4 C) $\dfrac{1}{4}$ D) $-\dfrac{1}{4}$
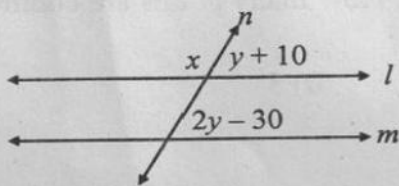
B) **Write only answers of each of the following sub-questions.**   **10**

1) Area of a trapezium is 84 cm². Length of one of its parallel sides is 10 cm. and its height is 6 cm. What is the length of the other parallel side ?

2) Two numbers differ by 20. One third of the greater number is half of the smaller number. Find the numbers.

3)

In the adjoining figure, line $l \parallel$ line m.
Line n is a transversal.

Find values of x and y.

4) In a circle of diameter 10 cm, a chord is at a distance of 6 cm from the centre. Find the length of the chord.

5) Find the condition on the values of x, so that the triangle of sides 40 cm, 37 cm, and x cm can be constructed.
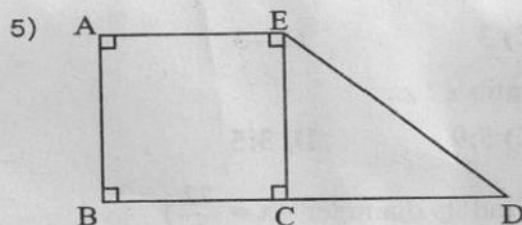
Q. 2) Solve the following sub-questions.   **15**

1) Factorize : $x^3 + 8y^3 + 4x^2y + 8xy^2$

2) Gopal leaves home and by walking at two third of his usual speed reaches his school 10 minutes late. How much time does he take usually to reach the school from home ?

3) Divide the polynomial $x^3 - 6x^2 + 11x - 6$ by $(x - 2)$ and write the remainder.

4) Seema purchased 8 chocolates for Rs. 10. How many chocolates should she sell for Rs. 10 to gain a profit of 60%?

5)

In the adjoining figure, □ABCE is a square with side 14 cm. If B, C, D are collinear and l (ED) = 50 cm,

find l (BD).

-2-

Q. 3) Solve, the following sub-questions. **20**

1) If $a + b - c = 6$, and $a^2 + b^2 + c^2 = 29$, find the value of $ab - bc - ac$.

2) Two years before, a machine was purchased for Rs. 62500. If its price reduces by 10% every year, what is the price of that machine today ?

3) Mohan bought a bicycle for Rs. 1040. He paid the amount in the form of notes of Rs. 100, Rs. 50 and Rs. 20. Number of 100 rupee notes was half of 50 rupee notes and number of 20 rupee notes was three times the number of 100 rupee notes. Find the number of notes of each denomination.

4)
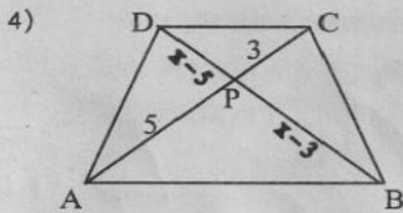
In the adjoining figure, □ABCD is a trapezium.

seg. AB ∥ seg. DC

Find the value of x.

5) $216^x = 1296^{-1/4} \times 6^{x-1}$. Find the value of x.

Q. 4) Solve, the following sub-questions. **20**

1) Construct ΔLMN such that l(LM)=5.2 cm, l(LN)=5.7 cm, height LT = 4.5 cm.

2) The L.C.M. of two numbers is fourteen times their G.C.D. The sum of the G.C.D. and the L.C.M. is 600. Find two pairs of such numbers.

3) Perimeters of a rectangle and a square are equal. The ratio of the length and breadth of the rectangle is 5 : 4. Find the ratio of the length of the rectangle to the side of the square.

4) Solve. $\dfrac{x}{2} + 1 = \dfrac{1}{2}\left(3x + \dfrac{2}{3}\right)$

5) A train running at a speed of 90 km/hr, crosses a bridge in 36 seconds. Another train having length 100 meters less, is running at a speed of 45 km/hr. In how much time will the train cross the same bridge ?

Q. 5) Solve the following sub-questions. **25**

1) □ABCD is a rectangle. Prove that seg. AC ≅ seg. BD

2) The price of sugar is increased by 20%. By what percent the consumption of sugar be reduced so that expenditure on sugar will remain the same?

3) Factorize : $1 + 2x + 2yz + x^2 - y^2 - z^2$

4) In a terminal examination Arun scored 82 marks in mathematics. Ajit scored 5 marks less than Amit and Amit scored 4 marks more than the average marks of the class. If the average of marks of Arun, Ajit and Amit is 2 more than the average of marks of the class, find the average of marks of the class.

5) A copper wire is bent to form a circle whose area is 616 sq. cm. If the same wire is bent to form a square, what will be the area of that square ? $(\pi = \frac{22}{7})$

● ● ●