

Greenlawns School, Worli
Final Examination 2023-2024
Mathematics

STD: VII
Date: 07/02/2024

Marks: 80
Time: 2 hours

Attempt all the questions

Question 1.

Choose one correct answer to the questions from the given options:

[10]

a. The cost price of an article if the selling price is Rs.46 and profit is Rs.8 will be:

- (a) Rs.36 (b) Rs.38 (c) Rs.42 (d) Rs.54

b. The perimeter of a square of side 40 cm will be:

- (a) 1.6 m (b) 1.4 m (c) 100 cm (d) 120 cm

c. What will be the simple interest on Rs.2000 for 6 years at the rate of 10% per annum?

- (a) Rs.1600 (b) Rs.200 (c) Rs.1500 (d) Rs.1200

d. The most frequently occurring data in a group of observations is called _____.

- (a) Mean (b) Median (c) Mode (d) All

e. The probability of an event lies between 0 and _____.

- (a) 1 (b) 2 (c) 10 (d) 100

f. 72 km/h in m/s would be:

- (a) 22 m/s (b) 23 m/s (c) 20 m/s (d) 25 m/s

g. If two angles and the included side of one triangle are correspondingly equal to the two angles and the included side of another triangle, they are said to follow:

- (a) S.A.S condition (b) R.H.S condition (c) A.A.S condition (d) A.S.A condition

h. The numerical coefficient of $6ab^2c$ is:

- (a) 2 (b) 6 (c) 3 (d) 4

i. In the equation $24 = x - 7$, the value of x is:

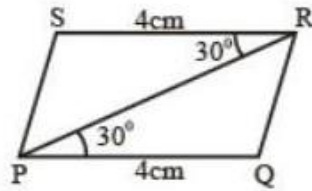
- (a) 17 (b) -17 (c) 31 (d) -31

j. If a circle is drawn inside a triangle such that it touches all the three sides of the triangle, it is called:

- (a) incircle (b) concentric circle (c) circumcircle (d) none

Question 2.

- a. The speed of a train is 30 km/h. How long will it take to cross a signal if its length is 25 m? [2]
- b. Find the amount if:
Principal = Rs.3500, time = 2 years and rate of interest = 8% per annum [2]
- c. The perimeter of a rectangle is 144 cm. If one of the two adjacent sides are 20 cm longer than the other, what are the length of its sides. [3]
- d. Following is a given pair of triangles. Prove that $SP = RQ$ [3]



Question 3.

- a. Solve the equation to find the value of x : $\frac{5x - 1}{x + 3} = 3$ [2]
- b. A shopkeeper bought a clock for Rs.1200 and sold it for Rs. 1440. Find the profit or loss percent. [2]
- c. In a survey of 80 students, it was observed that 68 of them like junk food, while the rest 12 dislike it. One student is chosen at random. Find the probability that the chosen student (i) likes or (ii) dislikes junk food. [2]
- d. The length and breadth of a rectangular field are 240 m and 120 m respectively. Find the area of the field and cost of turfing it at Rs. 40 per square meter. [2]
- e. Find the median of the following distribution: [2]

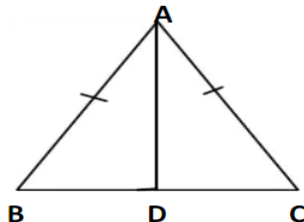
Marks obtained	92	95	98	100
No. of students	3	4	6	2

Question 4.

- a. Fill in the blanks: [2]
- The number of times an observation occurs in the given data is called its _____.
 - The raw data when put in ascending or descending order of magnitude is called _____.
- b. The sum of two consecutive even numbers is 54. Find the numbers. [2]
- c. The CP of 4 identical articles is equal to SP of 5 articles. Calculate the profit percent or loss percent made if all the articles bought have been sold. [3]
- d. Construct a right triangle ABC in which $AB = 6$ cm, $\angle B = 90^\circ$ and $\angle C$ is 30° . [3]

Question 5.

- a. State TRUE or FALSE: [2]
 i. The perimeter of a circle is called its circumference.
 ii. Side of a square = $\frac{\text{Area}}{4}$
- b. A coin is tossed 20 times and we get head 12 times. If the same coin is tossed one more time, find the probability that this time the coin comes out to be: [2]
 i. head ii. tail
- c. Multiply: $(2x + 6y - 1)(2x - 4y)$ [3]
- d. ABC is an isosceles triangle with $AB = BC$ and $AD \perp BC$. [3]



- i. Show the three pairs of equal parts giving reasons.
 ii. Is $\triangle ADB \approx \triangle ADC$?
 iii. Is $\angle BAD = \angle CAD$?
 Give reasons for your answers.

Question 6.

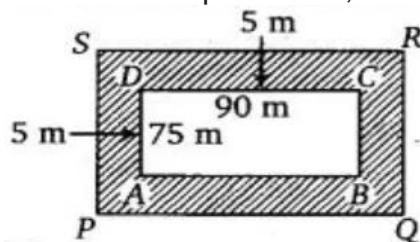
- a. The radii of two circles are 30 cm and 16 cm. Find the difference between their circumferences. [2]
- b. A dealer marks a T.V set for Rs.8,000 but agrees to give a discount of 25%. Find selling price of the T.V set. [2]
- c. A train passes a platform 125 m in length, in 21 sec and a man standing on the platform, in 6 sec. Find: [3]
 i. Length of the train ii. speed of the train
- d. Y invests Rs. Rs.9,000 and Z invests Rs.12,000 at the same rate of interest per annum. If at the end of 3 years, Z gets Rs.630 more interest than Y; find the rate of interest. [3]

Question 7.

- a. Find the mean, median and mode of the following data: [2+2+1]

9,5,7,2,3,5,4,3,2,5,7,9,4,3,5,9,2,3,5,5

- b. A garden is 90 m long and 75 m broad. A path 5 m wide is to be built outside and around it. Find the area of the path. Also, find the area of the garden. [3]



- c. Suppose R is an event that it will rain tomorrow and $P(R) = 0.02$. [2]
- i. State in words, the complementary event R'
 - ii. Find $P(R')$

Question 8.

- a. Draw a line segment of length 5.6 cm. Draw its perpendicular bisector. [2]
- b. Construct an equilateral triangle $\triangle XYZ$ such that its one side is 5.5 cm. Construct a circumcircle to this triangle. [4]
- c. Following data gives total marks (out of 600) obtained by six children of a particular Class. Represent the given data by a bar graph. [4]

Student	Ajay	Bali	Dipti	Faiyaz	Gotika	Hari
Marks Obtained	450	500	300	360	400	540
