

Muneeb



TAGORE INTERNATIONAL SCHOOL
EAST OF KAILASH, NEW DELHI

REVISION TEST (2024 - 2025)
MATHEMATICS
CLASS - X
SET- 1

Date: 11.11.2024
No. of pages: 4

Duration: 1 hour 30 minutes
M. Marks: 40

GENERAL INSTRUCTIONS

1. All questions are compulsory
2. This question paper has 4 sections, A, B, C and D.
3. Section A has **5 MCQs** and **1 assertion and reasoning** carrying **1 mark** each.
4. Section B has **5 questions** of **2 marks** and **5 questions** of **3 marks**.
5. Section C has **1 case study-based** question of **4 marks**.
6. Section D has **1 long answer type** question of **5 marks**.

SECTION -A

1. A card is selected at random from a well shuffled deck of 52 playing cards. The probability of its being a face card is (1 mark)
(a) $3/13$ (b) $4/13$ (c) $6/13$ (d) $9/13$
2. In a circle of radius 21 cm, an arc subtends an angle of 60° at the centre. The length of the arc is (1 mark)
(a) 20cm (b) 21cm (c) 22cm (d) 25cm
3. If we change the shape of an object from a sphere to a cylinder, then the volume of cylinder will (1 mark)
(a) increase (b) decrease (c) remains unchanged (d) doubles
4. Two players, Sangeeta and Reshma, play a tennis match. It is known that the probability of Sangeeta winning the match is 0.62. The probability of Reshma winning the match is (1 mark)
(a) 0.62 (b) 0.38 (c) 0.58 (d) 0.42
5. The mode and mean of a data is given by 7 and 8, respectively. The median will be: (1 mark)
(a) $1/13$ (b) $13/3$ (c) $23/3$ (d) 33

6. DIRECTION: In the following question, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option. (1 mark)

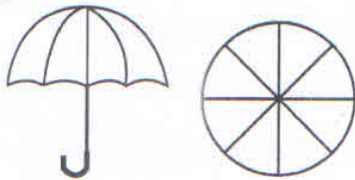
Assertion: Total surface area of the cylinder having radius of the base 14 cm and height 30 cm is 3872 cm^2 .

Reason: If r be the radius and h be the height of the cylinder, then total surface area = $(2\pi rh + 2\pi r^2)$.

- a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
 b) Both Assertion and Reason are true and Reason is not the correct explanation of Assertion.
 c) Assertion is true but Reason is false.
 d) Assertion is false but Reason is true.

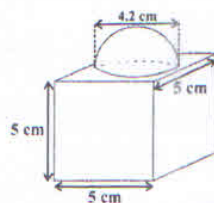
SECTION -B

7. An umbrella has 8 ribs which are equally spaced. Assuming the umbrella to be a flat circle of radius 45 cm, find the area between the two consecutive ribs of the umbrella. (2 marks)



8. A die is thrown once. Find the probability of getting a number which (2 marks)
- (i) is a prime number
 (ii) lies between 2 and 6.

9. The decorative block shown in the figure is made of two solids — a cube and a hemisphere. The base of the block is a cube with edge 5 cm, and the hemisphere fixed on the top has a diameter of 4.2 cm. Find the total surface area of the block. (Take $\pi = 22/7$) (2 marks)

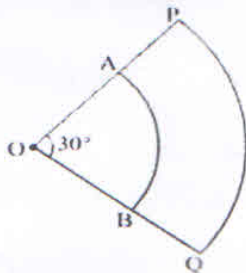


10. A survey conducted on 20 households in a locality by a group of students resulted in the following frequency table for the number of family members in a household: (2 marks)

Family size	1 - 3	3 - 5	5 - 7	7 - 9	9 - 11
Numbers of Families	7	8	2	2	1

Find the mode of this data.

11. 12 defective pens are accidentally mixed with 132 good ones. It is not possible to just look at the pen and tell whether it is defective or not. One pen is removed at random from the lot. Find out the probability that the pen taken out is a good one. (2 marks)
12. In the given figure, PQ and AB are respectively the arcs of two concentric circles of radii 7 cm and 3.5 cm and centre O. If $\angle POQ = 30^\circ$, then find the area of the shaded region. (3 marks)
[Use $\pi = 22/7$]



13. The following distribution shows the daily pocket allowance of children of a locality. The mean pocket allowance is ₹18. Find the missing frequency f . (3 marks)

Daily pocket allowance (in ₹)	11 - 13	13 - 15	15 - 17	17 - 19	19 - 21	21 - 23	23 - 25
Number of children	7	6	9	13	f	5	4

14. A sphere of diameter 12cm, is dropped in a right circular cylindrical vessel, partly filled with water. If the sphere is completely submerged in water, the water level in the cylindrical vessel rises by $3\frac{5}{9}$ cm. Find the diameter of the cylindrical vessel. (3 marks)
15. A box consists of 90 discs that are numbered from 1 to 90. When one disc is drawn randomly from the box, find out the probability that it has on it (3 marks)
- (i) a two-digit number
- (ii) a perfect square number
- (iii) a number divisible by 5.
16. A chord of a circle of radius 15 cm subtends an angle of 60° at the centre. Find the areas of the corresponding minor and major segments of the circle. (Use $\pi = 3.14$ and $\sqrt{3} = 1.73$) (3 marks)

SECTION-C

CASE STUDY- BASED QUESTION

17. In a coffee shop, coffee is served in two types of cups. One is cylindrical in shape with diameter 7 cm and height 14 cm and the other is hemispherical with diameter 21 cm.



Based on the above information, answer the following questions.

- (i) Find the area of the base of the cylindrical cup. (1 mark)
- (ii) What is curved surface area of the cylindrical cup? (1 mark)
- (iii) What is the capacity of the hemispherical cup? (2 marks)

SECTION-D

18. For Uttarakhand flood victims, money donated by teachers of a school is shown in the following frequency distribution: (5 marks)

Money donated (in ₹)	No. of Teachers
500-700	4
700-900	3
900-1100	18
1100-1300	2
1300-1500	3

Find the mean and median for this data.