Summative Assessment - Model Paper
Mathematics
(English Version)

Time : 15 Min + 2 hr. 30 min.   **Paper-II**   **Max. Marks :** 40

Instructions : 1.   Read the whole question paper and understand every question thoroughly, without writing any thing and 15 minutes of time is alloted for this.

2.   Answer all the questions.

3.   Write answers to the objective type questions on answer sheet, but at same place.

I.   Answer to all the following questions. Each question carries 1 mark.

1.   In ΔABC, D and E are points on AB & AC so that $\dfrac{AD}{AB} = \dfrac{AE}{AC} = \frac{1}{2}$. Represent this data diagnamatically and label it. (Rep V)

2.   How many tangents can be drawn to a circle from a point outside the circle ? Justify your answer. (R & P)

3.   How much cloth is required to set up a conical shaped tent with height 4 meters and radius 10.5 meters. (PS)

4.   Which has greater value among Cos 6º or Cos 60º ? Why ? (R & P)

5.   Length and breadth of a rectangle paper are in the ratio $\sqrt{3}$: 1. Then what is the angle made by its diagonal with its length. (PS)

6.   Find the probability of getting a prime number when a die is rolled once. (PS)

7.   Explain the procedure to find median of ungrouped data. (Com)

II.   Answer all the questions. Each question carries 2 marks.

8.   In a right angle triangle ABC right angled at B, a line BD $\perp$ AC is drawn and again DE $\perp$ BC is drawn. Then prove that $\dfrac{AC}{BC} = \dfrac{AB}{BE}$ with reasons. (R & P)

9.   If a line drawn through a point on a circle is perpendicular to radius of the circle to that point, then prove that it is tangent to the circle. (R & P)

10. If radius of a cylinder and a cone are equal and height of cone is double of that of cylinder, then fidn the relation between their volumes in the form of a ratio. (PS)

11. If $\sec \theta + \tan \theta = 1$, then find value of $\sin \theta$ in terms of l. (PS)

12. If unbiased coin is tossed 4 times. Then what is the probability of getting no head anytime ? (PS)

13. Draw a ogive curve for the following data (R & V)

Age intervale	0-5	5-10	10-15	15-20	20-25	25-30
No of persons	2	5	11	15	10	3

III. Answer all the questions. Each question carries 4 marks. There is internal choice for each question.

14(a) Construct a triangle with sides AB = 4cm, BC = 4.5cm, CA = 5cm, and also construct another triangle with 2/3 of corresponding sides of ΔABC (Rep & V)

(OR)

(b) Draw a circle of radius 4cm and construct tangents from a point 7 cm away from centre of the circle. (Rep & V)

15(a) A cylindrical tank has two hemispheres at its two ends. The length of axis at its centre is 11m and radius of a hemisphere is 3.5 m. Then find the capacity of the tank in litres.

(OR)

(b) A conical shaped tent has to set up on a cylindrical tent with its radius of base and height in the ratio 2 : 1. The heights of cylinder and cone are equal and ratio are 7 cm. Then how much cloth is required to set up the tent. (Con)

16(a) Two men on the same side of a tall building notice the angle of elevation to the top of the building to 30° and 60° respecting. If the height of the building is known to be h = 60m find the distance between the two men. (PS)

(OR)

(b) A man is watching a tower from a window of the hotel at the height 5m. The angle of elevation of top of the tower is 60° and the angle of depression of foot of the tower is 45°. Find the height of the tower. (PS)

17(a) The marks of students of x class in a mathematics exam are given here. Find median of the data by drawing a ogive curve. (PS)

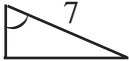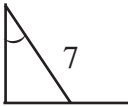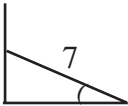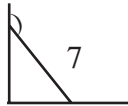| Marks interval	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50
No of students	2	4	6	7	10	9	5	4	3

(OR)

(b) The information of membersof a club with their ages are given here. Find median of the members ages by drawing two ogive curves. (PS)

Ages interval	21-23	24-26	27-29	30-32	33-35	36-38	39-41
No of members	3	13	22	21	23	14	4

IV. Write correct choice of the answer in the corresponding bracket. Each answer carries $\frac{1}{2}$ mark.

18.   In ΔABC the points E and F are on the sides AB and AC respectively. If AE = 4cm, EB = 4.5 cm, AF = 8 cm and FC = 9 cm, then   (Rep & V)   (   )

A) EF $\perp$ BC   B) EF $\perp$ AB   C) EF // BC   D) EF $\perp$ BC

19.   p : Every angle in an equilateral triangle in 60°

q : Every angle in an equilateral triangle is not 60° then   (Con)   (   )

A) q $\cong$ p   B) p $\cong$ ~(~q)   C) ~p $\cong$ q   D) p = q

20.   In a ΔABC are D, E and F are mid points of AB, BC and CA respectively. If ΔABC = 16 cm^2 than are ΔDEF = ... then   (PS)   (   )

A) 4 Cm^2 B) 16 Cm^2 C) 64 Cm^2 D) 32 Cm^2

21.   If the radius of two sphere are in the ratio 1 : 3, then their volumes are in the ratio (PS)

A) 1 : 3   B) 3 : 1   C) 3 : 6   D) 1 : 27   (   )

22.   In a right angle ΔABC right angled at B, then the relation exist (R & P)   (   )

A) Sin (90-A) = Sin C   B) Cos (90-A) = Sin C

C) Cos (90-C) = Cos C   D) Sin A = Sin C

23. For an acute angle A, Sin A = Cos A then (R & P)   (   )

 A) ∠A = 30°   B) ∠A = 45°   C) ∠A = 60°   D) ∠A = 75°

24. A stick of 7 m is leaning with a wall by making 30° angle with the ground. Then the diagram representing the data is (Rep & V)   (   )

 A)   B)   C)   D)

25. The set of total mutually exclusive and exhaustive events of a random experiment is called   (R & P)   (   )

 A) Complete set   B) Sample space

 C) Compulsory Event   D) No set occurs

26. The probability of an event is always lie (Com)   (   )

 A) in between -1 and 1   B) From 0 to 1

 C) more than 1   D) less than -1

27. The middle most value of data is called   (R & P)   (   )

 A) Mean   B) Median   C) Mode   D) No value exists