SSC PUBLIC EXAMS – TELANGANA STATE

MODEL PAPER-2

SUB : Maths (E/m)   **Class: X**   Paper-II

**Time : 2 hours 45 min**   **Max. Marks : 40**

Instructions:

    i) Read the following Question paper and understand every Question thoroughly without writing anything. 15 Minutes time is allotted for this.

    ii) Answer all the Questions from the given "four" Section

    iii) Write answers to the objective type Questions (Section-IV) on answer sheet. But at same place.

    iv) In Section-III, every Question has internal choice. Answer to anyone alternative.

Section-I

i)   Answer all the following Questions.

ii)   Each Questions carries 1 Mark   7x1=7

1.   In the figure De//BC, then find x _____cm?
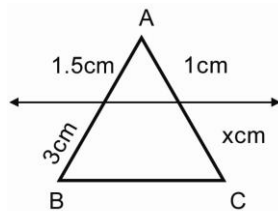
2.   A bag contains lemon flavoured eandies only. Malini takes out one is candy without looking into the bag. What is the probability that she takes out?

     i)   an orange flavoured candy ii) a lemon flavoured candy?

3.   If $Sec\emptyset + Tan\emptyset = P$; then find $sec\emptyset - Tan\emptyset$ value?

4.   Find the volume of a sphere of radius 2.1 cm?

5.   Write volume of principle of cone. And express each terms?

6.   Find the mode of date. 2,2, 2, 3,3,3,4,4,4,5,5,5,6,6,6

7.   Draw the diagram for the following situation.

     A person observes two banks of a river at angle of depression $\emptyset_1$ and $\emptyset_2$ and $\emptyset_2(\emptyset_1 < \emptyset_2)$ from the top of a tree of height 'h' which is at a side of the river. The width of the river is 'd'.

Section-II

i)   **Answer all the following Questions.**

ii) **Each Questions carries 2 Mark**   6x2=12

8.   Prove that $\sqrt{\dfrac{1+\cos\theta}{1-\cos\theta}} = \operatorname{cosec}\theta + \cot\theta$

9. $\Delta ABC \sim \Delta DEF$ and their areas are respectively 64cm^2, 121cm^2. If EF=15.4cm ; then find BC?

10. Find the volume of the largest right circular cone that can be cut out of a cube whose side is '7 cm'?

11. Prove that $\cot\theta + \operatorname{Tan}\theta = \sec\theta.\operatorname{cosec}\theta$

12. Find the volume and the total surface area of a hemisphere of radius 3.5cm $\left[\pi = \dfrac{22}{7}\right]$

13. The top of a clock tower is observed at angle of elevation of 'a' and the foot of the tower is at the distance of d meters from the observer. Draw the diagram for this data?

Section-III   4x4=16

14. A) Two dies one is red and other is white thrown simultaneously what is the probability of data?   [OR]

   B) Prove that $\dfrac{\sin\theta - \cos+1}{\sin+\cos-1} = \dfrac{1}{\sin\theta - \operatorname{Tan}\theta}$

15. A) Draw a circle of radius 6cm. from a point 10cm away from the its centre. Construct the pair of tangents to the circle and mesure their lengths. Verify by using pythogorus theorem?   [OR]

   B) 30 women were examined in a hospital by a doctor and their of heart beats per minute were recorded and summarized as shown. Find the mean heart beats per minute for these women.

Number of hearts beats/minute	65-68	68-71	71-74	74-77	77-80	80-83	83-86
Number of women	2	4	3	8	7	4	2

16. A) The following table shows the ages of the patients admitted in a hospital during a year.

Age (in years)	5-15	15-25	25-35	35-45	45-55	55-65
Number of patients	6	11	21	23	14	5

Find the mode?   [OR]

B) Construct a triangle of sides 4cm, 5cm, and 6cm, then construct similar to it whose sides are 2/3 of the corresponding sides of the first triangle?

17. A) A solid metallic sphere of diameter 28cm is melted and recast into a number of smaller cones each of diameter $4\frac{2}{3}$ cm and height 3cm. find the number of cones so formed?

[OR]

B) Raju and Ravi both are on eigher side of temple of elevation 30^0 and 60^0 respectively. Find the distance between Raju and Ravi?

Section-IV

10x1/2=5

i) **Choose the correct answer and write the corresponding alphabet (A,B,C,D) in the given answer booklet.**

ii. **Answer all questions and write then at the same place in your booklet.**

iii. **Each question carries 1/2 marks.**

18. How many tangents drawn from extranal points…………..

   a) 1   b) 2   c) 3   d) 9

19. In a cylinder radius r=3.5cm, h=10cm. then find the curved surface area of cyclinder=…..cm^2.

   a) 1600   b) 120   c) 220   d) 1500

20. ()=_____.

   a) 1   b) 0   c) -1   d) 8

21. ()=_____

   a) 7   b) 0   c) 8   d) 1

22. Which of the following cannot be the probability of an event?

   a) 2.3   b) -1.5   c) 15%   d) A and B
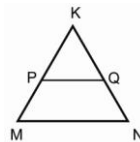
23. $P(E)+P(\overline{E})=$_____

   a) 0   b) 1   c) -1   d) 2

24. 17, 31, 12, 27, 15, 19, 23. Find the median _____

   a) 16   b) 20   c) 19   d) None

25. Given the figure PQ//MN, () and KN=20.4 cm. then find KQ=_____cm.

   a) 4.8   b) 8.4

   c) 3.5   d) 18.4

26. Which of the following sides are not of a right triangle? (in cm)

   a) 9,15,12   b) 9,5,7   c) 400,300,500   d) 2, $\sqrt{5}$,1

27. The shaded region representes as _____

   a) Sector   b) Minor line segment

   c) Major line segment   d) None