

**SSC PUBLIC EXAMS – TELANGANA STATE****MODEL PAPER-3**

SUB : Maths (EM)

Class: X

Paper-II

Time : 2 hours 45 min

Max. Marks : 40

**Instructions:**

1. Read the whole question paper and understand every question thoroughly without writing anything and 15 minutes of time is allotted for this.
2. Answer all the questions from the given four sections I,II,III and IV.
3. Write answers to the objective type questions on answer-sheet only.
4. In section-III every question has internal choice. Answer any one alternative.

**Section-I****i) Answer all the following Questions.****ii) Each Questions carries 1 Mark****7x1=7**

1.  $\Delta ABC \sim \Delta DEF$  and their areas are respectively  $64\text{cm}^2$  and  $2\text{cm}^2$  If  $e = 15.4\text{cm}$ , then find BC.
2. In a cuboid length =5cm, breadth =3cm, height =2cm, then find the value of cuboid.
3. A bag contains 3red marbles 2 blue marbles a marbles is selected random from the bag what is the probability of blue marble.
4. Radius of circle 8.4cm then find the per meter of circle.
5. A ladder of length x meter is leaning against a wall making angle  $\theta$  with the ground which trigonometric ratio would you like to consider to find the height of the point on the wall at which the ladder is touching?
6. Is it right to say that  $\sin(A+B) = \sin A + \sin B$ ? Justify your answer.
7. The wickets taken by a bowler in 10 cricket matches are as follows : 2,6,4,10,2,1,3,2,3 Does the mode change. If another observation is added to the data in example comment.

**Section-II****i) Answer all the following Questions.****ii) Each Questions carries 2 Mark****6x2=12**

8. A ladder 25m long reaches a window of building 20m above the ground. Determine the distance of the foot of the ladder from the building.
9. Gopi buys a fish from a shop for his aquarium. The shopkeeper takes out one fish at random from a tank containing 5 male fish and 8 female fish what is the probability that the fish taken out is a male fish?
10. Calculate the length of tangent from a point 15cm away from the centre of a circle of radius 9cm.
11. Prove that  $(1+\cot^2\theta) (1-\cos \theta) (1+\cos \theta) = 1$ .

12. The shape of solid iron is a cylindrical. Its height is 11cm. and base diameter is 7cm. Then find the total volume of 50 such rods?
13. The heights of two poles are 6m and 11m are standing on ground and distance between the two poles are 12m. Then find the distance between end of the two poles?

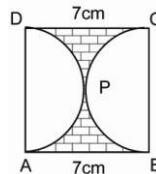
**Section-III****4x4=16**

- i) **Answer all the questions.**
- ii. **Each question has Internal choice to answer**
- iii. **Each question carries 4 marks**

14. A) The following distribution gives the daily income of 50 workers of a factory (OR)

Daily Income (in Rupees)	250-300	300-350	350-400	400-450	450-500
No. of Workers	12	14	8	6	10

- B) A box contains 90 discs which are numbered from 1to90. If one disc is selected at random from the box, find the probability that it bears (i) a two-digit number. (ii) a number divisible by 5.
15. A) Prove that  $(\sin A + \operatorname{cosec} A)^2 + (\cos A + \sec A)^2 = 7 + \tan^2 A + \cot^2 A$ . (OR)
- B) ABC is a triangle and PQ is a straight line meeting AB in P and AC in Q. If  $AP=1\text{cm}$ . and  $BP=3\text{cm}$ .,  $AQ=1.5\text{cm}$ .,  $CQ=4.5\text{cm}$ ., prove that  $(\text{area of } \triangle APQ) = \frac{1}{16} (\text{area of } \triangle ABC)$
16. A) The angle of elevation of the top of a tower from the fool of the building is  $30^\circ$  and the angle of elevation of the top of the building from the foot of the tower is  $60^\circ$ . Find the height of ratios.[OR]
- B) A medicine capsule is in the shape of a cylinder with two hemisphere struck to each of its ends. The length of the capsule is 14mm. and the width is 5mm. find its surface area.
17. A) Find the area of the shaded region in figure, if ABCD is a square of side 7cm and APD and BPC are semi circuses  $\left(\text{use } \pi = \frac{22}{7}\right)$  [OR]



- B) 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..

Family size	1-3	3-5	5-7	7-9	9-11
Number of families	5	X	20	15	Y

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.

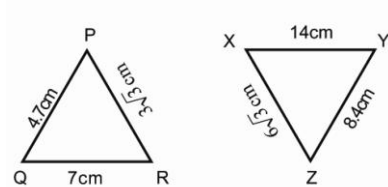
iii. Each question carries 1/2 marks.

18.  $\Delta ABC \sim \Delta PQR$  and the parameter of  $\Delta ABC$  is 32cm and parameter of triangle PQR is 48cm and  $PR=6$ cm then  $AC=$

- a) 7                                      b) 6                                      c) 4                                      d) 13

19. From given the figure find  $\angle x=$ \_\_\_\_\_

- a)  $40^{\circ}$                                       b)  $30^{\circ}$   
 c)  $70^{\circ}$                                       d)  $50^{\circ}$



20. Radius of circle = 6cm find the length of the tangent to circle with centre 'o' and from a point P such that  $OP=10$ cm.

- a) 10                                      b) 11                                      c) 9                                      d) 3

21. In a cylinder  $r=3.5$ cm,  $h=10$ cm then find the coriod surface are \_\_\_\_\_ $cm^2$

- a) 1600                                      b) 120                                      c) 220                                      d) 1800

22. If coin and hemisphere are equal base equal volumes then find the ratios of heights

- a) 2:1                                      b) 3:1                                      c) 1:1                                      d) 2:1

23.  $\sin^2 60 + \cos^2 60 =$ \_\_\_\_\_

- a) 1                                      b) 3                                      c) 4                                      d) None

24. If  $\sin \theta = \cos \theta$  then  $\theta =$ \_\_\_\_\_

- a)  $45^{\circ}$                                       b)  $60^{\circ}$                                       c)  $90^{\circ}$                                       d) None

25. The 25 observations are arged in ascending order then find what is the median

- a) 12                                      b) 13                                      c) 14                                      d) 15

26.  $P(E)=0.82$  then  $P(\bar{E})=$ \_\_\_\_\_

- a) 0.8                                      b) 0.28                                      c) 0.38                                      d)  $P(E)=P(\bar{E})$

27. A diy is thrown ones then find the probability of even numbers.

- a) 1/6                                      b) 1/3                                      c) 1/2                                      d) 2/5