# 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:**

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

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

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

viii)   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.   If a cone, hemisphere, cylinder are on the same base and having the same height, then what is the ratio of their volumes? Justify your answer.

2.   The perimeters of two similar triangles ABC and PQR are 60cm and 36cm respectively. If PQ=9cm, then find AB=___?

3.   If a coin is toiled once, what is the probability of getting a tail?

4.   Find the mode (z) of first 'n' natural numbers.

5.   Evaluate $\dfrac{2\,\text{Tan}30^0}{1+\text{Tan}^2 30^0}$

6.   From the figure find x value.
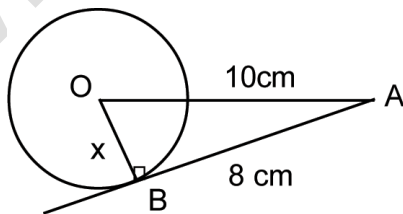


7.   Keerthi observes a flower on the ground from the balcony of the first floor of a building at an angle of depression $\beta^0$. The height of the first floor of the building is x meters. Draw the diagram for this data.

## Section-II

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

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

8. A person 1.65m tall casts 1.8m shadow. At the same instance a lamp posts costs a shadow of 5.4m. find the height of the lamp post?

9. A bag contains $3^{rd}$ balls and 5 black balls. A ball is selected at random from the bag what is the probability that the ball selected is i) Red ii) not red?

10. Prove that the tangents to a circle at the end points of a diameter are parallel?

11. If TanA=cotB where A and B are acute angles prove that $A+B=90^{0}$

12. Find the surface area of a sphere of radius 2.1cm.

13. 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?

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

i) **In this section, every question has internal choice**

ii. **Answer the any one alternative.**

iii. **Each question carries 4 marks**

14. A) A die is thrown twice. What is the probability that i) 5 will come up at least once?

    ii) 5 will not come up either time?                          [OR]

    B) Consider the following distribution of daily wages of 50 workers of a factory

| Daily wages in Rupees | 200-250 | 250-300 | 300-350 | 350-400 | 400-450 |
|---|---|---|---|---|---|
| No. of Workers | 12 | 14 | 8 | 6 | 10 |

15. A) If cosec∅+cot∅=K then prove that $\cos\theta = \dfrac{K^2 - 1}{K^2 + 1}$

    B) Construct a triangle of sides 5cm, 6cm, 7cm. then, construct a triangle similar to it whose sides are 2/3 of the corresponding sides of the first triangle?

16. A) Draw a graph for the polynomial $P(x)=x^{2}-3x-4$ and find its zeros from the graphs                          [OR]

    B) A women self help group (DWACRA) is supplied a rectangular solid of wax with diameters 66cm, 42cm, 21cm to prepare cylindrical candles each 4.2cm in diameter 2.8cm height. Find the number of candles?

17. A) Construct a tangent to a circle of radius 4cm from a point on the concentric circle of radius 6cm and measure its length. Also verify by pythogarus theorem? [OR]

B) If the median of 60 observations, given below is 28.5, find the values of 'x' and 'y'.

| Class Internal | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 |
|---|---|---|---|---|---|---|
| Frequency | 5 | X | 20 | 15 | Y | 5 |

**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.  Number of diameters of a circle is _____

   a)  2                     b) 5                     c) 6                     d) Infinite

19.  height of equilateral triangle whose side is 'a' units is _____ units.

   a) $\dfrac{\sqrt{3}}{4}a^2$            b) $\dfrac{\sqrt{3}}{2}a$            c) BCA                d) None

20.  Total surface Area of cylinder is _____sq. units.

   a) $2\pi r[h+r]$          b) $2\pi rh$            c) $2\pi r[h-r^2]$        d) All

21.  If TanA=3/4 then secA=_____

   a) 1/5                   b) 4/5                   c) 5/4                   d) 1/3

22.  The height of tower is 10m. the length of its shadow when sun's altitude is $45^0$ is ___m

   a) 10                    b) 20                    c) 19                    d) 16

23.  The probability of sure event is _____

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

24.  If a die is rolled, them the probability of getting even number is _____

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

25.  Mean of 23, 24, 24, 22 and 20 is

   a) 22.6                  b) 16.2                  c) 18.9                  d) 20.3

26.  Tan $\theta$ is not defined if $\theta$=_____

   a) $50^0$                b) $80^0$               c) $20^0$               d) $90^0$

27.  In $\triangle$ABC $AC^2=AB^2+BC^2$ then $\angle B$ =_____

   a) $60^0$                b) $90^0$               c) $36^0$               d) $100^0$