

**SINDHI HIGH SCHOOL, BENGALURU**

**I11 PERIODIC TEST [2023-24]**

**SUBJECT: MATHEMATICS**

**Max Marks: 30**

**Class: X Duration: 1hr 10mins**

**Date:10.11.2023 Reading Time:8:30-8:40am**

**No of Sides: 03 Writing Time: 8:40-9:40am**

**GENERAL INSTRUCTIONS:**

* This Question Paper has 5 Sections A-E.
* Section A has 7 MCQs carrying 1 mark each
* Section B has 4 questions carrying 02 marks each.
* Section C has 2 questions carrying 03 marks each.
* Section D has 1question carrying 05 mark.
* Section E has 1 case based integrated units of assessment carrying 4 marks

sub-parts of the values of 1, 1 and 2 marks each.

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|  | **Section A** |  |
|  | **Section A consists of 7 questions of 1 mark each.** |  |
| 1 | The quadratic equation 2x2 -x +1 =0 has  (a) Two equal real roots (b) Two distict real roots  (c) No real roots (d) More than two real roots | 1 |
| 2 | If the angle of elevation of the top of a tower from a point on the ground 100m away from the foot of the tower is 300, then the height of the tower is  (a)100 (b) 100 (c) (d) 75 | 1 |
| 3 | The diameter of a circle whose area is equal to the sum of the areas of two circles of radii 24 cm and 7 cm is  (a)31 cm (b) 25 cm (c) 65 cm (d) 50 cm | 1 |
| 4 | If x=1 is a common root of the equations ax2+ax +3=0 and x2 +x + b =0 then ab is  (a) 6 (b)3 (c)-3 (d) | 1 |
| 5 | The length of shadow of a tower on the plane ground is times the height of the tower. The angle of elevation of sun is  (a)450 (b) 300 (c) 600 (d) 900 | 1 |
| 6 | If the height of the tower and the distance of the point of observation from it’s foot, both are increased by 10 %, then  the angle of elevation  (a) Remains same (b) Doubled (c) Tripled (d) Halved | 1 |
| 7 | **Assertion(A)** :The area of the minor segment of a circle is always less than the area of the corresponding sector of the circle.  **Reason (R)**: The area of the major segment of a circle is always less than the area of the corresponding sector of the circle   1. Both assertion(A) and Reason(R) are true and reason is the correct explanation for assertion. 2. Both assertion(A) and Reason(R) are true but reason is not the correct explanation for assertion. 3. Assertion(A) is true, but reason(R) is false. 4. Assertion(A) is false, but reason(R) is true. | 1 |
|  | **Section B** |  |
|  | **Section B consists of 4 questions of 2 marks each.** |  |
| 8 | The sum of the squares of two consecutive odd positive integers is 394. Find them. | 2 |
| 9 | A chord of a circle of radius 10 cm subtends a right angle at the centre. Find the area of the corresponding minor segment(use = 3.14) | 2 |
| 10 | The angle of depression from the top of a tower 12m high, at a point on the ground is 300. Find the distance of the point from the top of the tower. | 2 |
| 11 | Find the roots of the quadratic equation by applying quadratic formula.  2x27x +3 = 0 | 2 |
|  | **Section C** |  |
|  | **Section C consists of 3 questions of 2 marks each.** |  |
| 12 | A round table cover has six equal designs, as shown in the figure. If the radius of the cover is 28 cm . Find the cost of making the design at the rate of rupees  0. 35 / cm2. ( = 1.7) | 3 |
| 13 | A 1.2m tall girl spots a balloon moving with the wind in horizontal line at the height of 88 .2m from the ground. The angle of elevation of the balloon from the eyes of the girl at any instant is 600. After some time, the angle of elevation reduces to 300. Find the distance travelled by the balloon during the interval. | 3 |
|  | **Section D** |  |
|  | **SECTION D has one question carrying 5 marks.** |  |
| 14 | A train travels 360 km at a uniform speed . If the speed had been 5km/h more, it would have taken 1 hour less for the same journey. Find the speed of the train. | 5 |
|  | **Section E** |  |
|  | **Section E consists of one Case base study questions of 4 mark** |  |
| 15 | The following TV tower was built in 1988 and is located in Pitampura, Delhi. It has an observation deck. Observe the picture given below.  The TV tower stands vertically on the ground. The angle of elevation of top of the tower (point B) is 600. There is a point C on the tower which is 78m above the ground. The angle of elevation of the point C from point A is found to be 300  C:\Users\admin\Desktop\aaa.PNG  (i) Draw a neat labelled figure based on the information given above(1M)  (ii) Calculate the distance of the tower from point A. (1M)  (iii Find the height of the tower. (2M) | 4 |

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