



## MATHS

### BOOKS - SURA MATHS (TAMIL ENGLISH)

### II TERM SUMMATIVE ASSESSMENT 2018-19

Choose The Correct Answer

1. For any three sets  $P, Q$  and  $R$ ,  $P - (Q \cap R)$  is

A.  $P - (Q \cup R)$

B.  $(P \cap Q) - R$

C.  $(P - Q) \cup (P - R)$

D.  $(P - Q) \cap (P - R)$

Answer: C



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2.

If

$$n(A \cup B \cup C) = 100, n(A) = 4x, n(B) = 6x, n(C) = 5x, n(A \cap B) = 20$$

and  $n(A \cap B \cap C) = 10$  then the value of  $x$  is .

A. 10

B. 15

C. 25

D. 30

**Answer: A**

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3. If  $\sqrt{80k} = \sqrt{5}$  then  $k = \dots\dots$

A. 2

B. 4

C. 8

D. 16

**Answer: B**



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4. If  $\sqrt{9^x} = \sqrt[3]{9^2}$  then  $x = \dots\dots\dots$

A.  $\frac{2}{3}$

B.  $\frac{4}{3}$

C.  $\frac{1}{3}$

D.  $\frac{5}{3}$

**Answer: B**



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5. Cubic polynomial may have maximum of \_\_\_\_\_ linear factors.

A. 1

B. 2

C. 3

D. 4

**Answer: C**



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6. The GCD of  $a^k, a^{k+1}, a^{k+5}$  where  $k \in \mathbb{N}$

A.  $a^k$

B.  $a^{k+1}$

C.  $a^{k+5}$

D. 1

**Answer: A**



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7. In a cyclic quadrilateral ABCD  $\angle A = 4x$ ,  $\angle C = 2x$  the value of  $x$  is

A.  $30^\circ$

B.  $20^\circ$

C.  $15^\circ$

D.  $25^\circ$

**Answer: A**



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8. AD is a diameter of the circle and AB is a chord. If  $AD = 30$  cm and  $AB = 24$  cm then the distance of AB from the centre of the circle is....

A. 10 cm

B. 9cm

C. 8cm

D. 6cm

**Answer: B**



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9. A particular observation which occurs maximum number or times in a given data is called its

A. Frequency

B. range

C. mode

D. media

**Answer: C**

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10. The median of the first 10 whole numbers is

A. 4

B. 4.5

C. 5

D. 5.5

**Answer: B**

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**Subjective**

1. Draw the Venn diagram of  $A \cup (B \cap C)$

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2. Find the value of  $(243)^{2/5}$



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3. Simplify  $\sqrt{63} - \sqrt{175} + \sqrt{28}$



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4. Represent the following information in scientific notation :

The world population is nearly 7000,000,000.



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5. Show that  $(x + 2)$  is a factor of  $x^3 - 4x^2 - 2x + 20$



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6. Expand  $(2x + 3y + 4z)^2$



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7. Find  $a^3 + b^3$  if  $a + b = 6$ ,  $ab = 5$



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8. The radius of the circle is 25 cm and the length of one of its chord is 40 cm. Find the distance of the chord from the centre.



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9. Find the value of  $x$



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10. Find all the angles of the given cycle quadrilateral ABCD in the figure.



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11. The mean weight of 4 members of a family is 60 kg. Three of them have the weight 56 kg, 68 kg and 72 kg respectively. Find the weight of fourth member.



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12. The following are the scores obtained by 11 players in a cricket match 7,21,45,12,56,35,25,0,58,66,29. Find the median score.



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13. Find the mode of the given data : 3.1, 3.2, 3.3, 2.1, 1.3, 3.3, 3.1



14. If  $U = \{4, 7, 8, 10, 11, 12, 15, 16\}$ ,  $A = \{7, 8, 11, 12\}$  and  $B = \{4, 8, 12, 15\}$  and  $(A \cup B)'$

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15. If  $(x-1)$  divides the polynomial  $kx^3 - 2x^2 + 25x - 26$  without remainder, then find the value of  $k$ .

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16. If  $A = \{11, 13, 14, 15, 16, 18\}$ ,  $B = \{11, 12, 15, 16, 17, 19\}$  and  $C = \{13, 15, 16, 17, 18, 20\}$  then verify  $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$ .

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17. Verify  $(A \cup B)' = A' \cap B'$  using Venn diagram.



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18. A survey of 1000 farmers found that 600 grew paddey, 350 grew ragi, 280 grew corn. 120 grew paddy and ragi. 100 grew ragi and corn, 80 grew paddy and corn. If each farmer grew atleast any one of the above three, then find the number of farmers who grew all the three.



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19. Arrange in ascending order:  $\sqrt[3]{2}$ ,  $\sqrt[2]{4}$ ,  $\sqrt[4]{3}$



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20. If  $a = 4$ ,  $b = 5$  and  $c = 6$  then find the value of

$$\left[ \frac{(ab + bc + ca - a^2 - b^2 - c^2)}{(3abc - a^3 - b^3 - c^3)} \right]$$



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21. Factorize  $x^3 + 13x^2 + 32x + 20$  into linear factors



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22.  $AB$  and  $CD$  are two parallel sides of a cyclic quadrilateral  $ABCD$  such that  $AB = 10$  cm,  $CD = 24$  cm and the radius of the circle is 13 cm. Find the shortest distance between the two sides  $AB$  and  $CD$ .



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23. The following data gives the number of residents in an area based on their age. Find the average age of the residents.



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24. The following table gives the weekly expenditure of 200 families. Find the median of the weekly expenditure.



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25. Find the value of a and b if  $\frac{\sqrt{7} - 2}{\sqrt{7} + 2} = a\sqrt{7} + b$

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26. In a circle, AB and CD are two parallel chords with centre O and radius 10 cm such that AB=16 cm and CD= 12 cm determine the distance between the two chords?

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27. Draw an equilateral triangle of side 6.5 cm and locate its incentre. Also draw the incircle.



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28. Construct the centroid of  $\Delta PQR$  whose sides are  $PQ = 8\text{cm}$ ,  $QR = 6\text{cm}$ ,  $RP = 7\text{cm}$



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