KSEEB MODEL QUESTION PAPER-1

SUBJECT: MATHAMATICS(81E) MARKS:40

1 **If a pair of linear equations $3x + 2Ky = 2$ and $2x + 5y + 1 = 0$ are parallel to each other, then the value of 'K'**

A. $\frac{15}{4}$ B. $\frac{3}{2}$

C. 5 D. $\frac{4}{15}$

2 **The nature of the roots of the quadratic equation $x^2-2x+1=0$ are**

A. real and equal

B. real, rational and distinct

C. real, irrational and distinct

D. complex

3 **The values of 'x' and 'y' when a point lies on the linear equation $2x - 3y = 12$**

A. $x = 0, y = -3$ B. $x = 2, y = 3$

C. $x = 3, y = -2$ D. $x = -2, y = +3$

4 **Identify the wrong statement with respect to a pair of linear equations**

A. If lines are parallel there is no solution

B. If the lines are perpendular to each other, there is no solution

C. Many solutions if the lines coincide each other

D. A unique solution if they intersect

5 **The 10th term of the Arithemetic progression -3, -1, 1, 3 ..... is**

A. 20 B. -21

C. -15 D. 15

6 **The n^{th} term of an Arithmetic progression is given by $a_n=7 - 4n$ then the common difference is**

A. 4 B. -4

C. 3 D. -3

7 **If 4, a, b, 28 are in Arithemetic progression then the value of 'b' is**

A. 20 B. 19

C. 23 D. 12

8 **Two arithmetic progressions has the same common difference. If the first term of the first progression is 3 and that of the other is 8, then the difference between their 3rd term is**

A. 2 B. 3

C. 4 D. 5

9 **The sum of first 'n' terms of an arithemetic progression is given by the formula $S_n = 3n^2 + n$, then its 3rd term is**

A. 14 B. 16

C. 22 D. 42

10 **The constant term in the quadratic equation $3x^2-3(2x-4)=0$, after reducing it to the standard form $ax^2+bx+c=0$ is**

A. 3 B. 4

C. -12 D. 12

11 **One root of the quadratic equation $(2x-3)(x+5)=0$ is -5, then the other root is**

A. 5 B. $\frac{-3}{2}$

C. $\frac{3}{2}$ D. $\frac{2}{3}$

12 **The nature of the roots of the quadratic equation $x^2-2x+1=0$ are**

A. real and equal

B. real, rational and distinct

C. real, irrational and distinct

D. complex

13 **The sum of the squares of two consecutive odd numbers is 394. The mathematical equation for the above statement is**

A. $x^2+(x+1)^2=394$

B. $x^2+(x+2)^2=394$

C. $(x+1)^2+(x+2)^2=394$

D. $x+(x+2)^2=394$

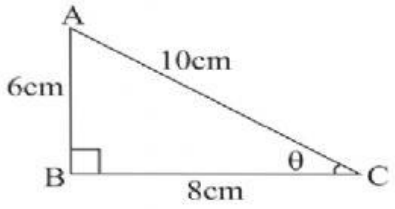
14 **In the given figure $\angle B=90^0$, AB=6cm, BC=8cm and AC=10cm then the value of Sin(90-θ) is**

A. $\frac{6}{10}$

B. $\frac{10}{6}$

C. $\frac{10}{8}$

D. $\frac{8}{10}$



15 **If $2\sin 2\theta = \sqrt{3}$ the value of 'θ' is**

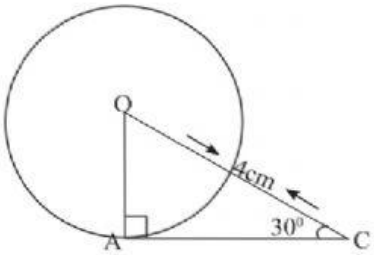
A. 90^0

B. 60^0

C. 30^0

D. 45^0

16 **In a circle with centre 'O' AC is a tangent at 'A'. If OC=4cm and $\angle ACO=30^0$ then the radius of the circle is**



A. $\sqrt{3}$ cm

B. $4\sqrt{3}$ cm

C. 2cm

D. 3cm

17 **If $\sin\theta = \frac{x}{y}$ then Cos 'θ' is**

A. $\frac{y}{\sqrt{y^2-x^2}}$

B. $\frac{y}{x}$

C. $\frac{x}{\sqrt{y^2-x^2}}$

D. $\frac{\sqrt{y^2-x^2}}{y}$

18 **If $\sin A+\sin^2 A=1$ then the value of $\cos^2+\cos^4 A$ is**

A. $\frac{1}{2}$

B. 2

C. 3

D. 1

19 **If origin is the mid point of the line joining of the points A(4-6) and B(a,b) the values of 'a' and 'b' are equal to**

A. a = 4 and b = 6

B. a = -4 and b = -6

C . a = -4 and b = 6

D. a = 6 and b = 4

20 **The distance between the points $A(x_1\ y_1)$ and $B(x_2\ y_2)$ is given by the formula**

A. $d=\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$

B. $d=\sqrt{(x_1-y_1)^2+(x_2-y_2)^2}$

C. $d=\sqrt{(x_1-y_2)^2+(x_2-y_1)^2}$

D. $d=\sqrt{(x_2-x_1)+(y_2-y_1)}$

21 **If the points A(1,2) O(0,0) and C(a,b) are collinear then.**

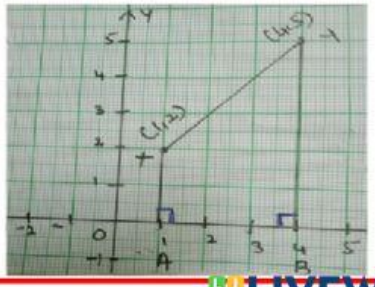
A. a = b

B. b = 2a

C. a = 2b

D. a+b = 0

22 **In the graph given the length AB is**



A. 1 unit

B. 5 units

C. 3 units

D. 4 units

23 **A student scored 65 marks in I language, 50 marks in Science, 55 marks in Social Science and some marks in Mathematics. If the average marks scored by him in all the four subjects is 60, then the marks scored by him in Mathematics is**

A. 65 B. 60

C. 50 D. 70

24 **The empherical relation between the three "central tendencies" is**

A. 3median = mode + 2mean B. 2mean = mode + 3median

C. 2median = 2mode + 3mean D. Mode = 3mean - median

25 **In the given frequency distribution table the median class is :**

Class Interval	0-10	10-20	20-30	30-40	40-50
Frequency	5	8	12	15	20

A. 10-20

B. 20-30

C. 30-40

D. 0-10

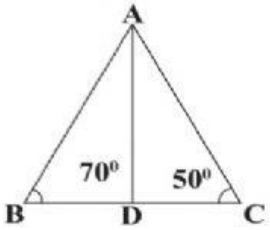
26 **In the ΔABC, it is given that $\frac{AB}{AC} = \frac{BD}{CD}$. If $\angle B=70^0$, $\angle C=50^0$ then $\angle BAD$ is :**

A. 30^0

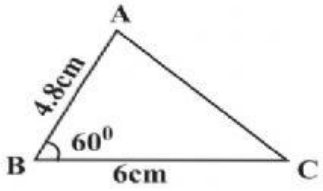
B. 40^0

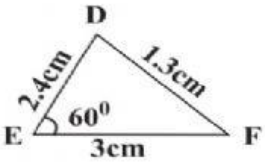
C. 45^0

D. 50^0



27 **In the given figure $\Delta ABC \sim \Delta DEF$ and $\angle ABC=\angle DEF = 60^0$ then the length of AC :**





A. 2.4 cm B. 2.6 cm

C. 3.9 cm D. 3.2 cm

28 **In the ΔABC, DE || BC. If AB : AD = 5 : 3 then area of ΔABC : area of ΔADE is**

A. 3 : 5 B. 6 : 10

C. 9 : 25 D. 25 : 9

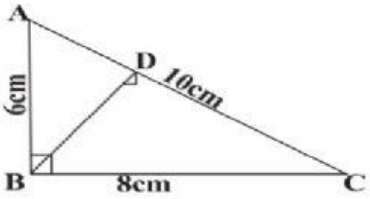
29 **In the given figure $\angle ABC=90^0$, BD $\perp$ AC. If AB=6cm, BC=8cm, CA=10cm then the length of AD is :**

A. 6.3 cm

B. 3.6 cm

C. 3 cm

D. 4 cm



30 **The sides of some triangles are given below. Identify which does not form a Right Triangle**

A. 5cm, 12cm, 13cm

B. 8cm, 15cm, 17cm

C. 3cm, 8cm, 6cm

D. 7cm, 24cm, 25cm

31 **Four statements are given below with respect to the tangents. The wrong statement is:**

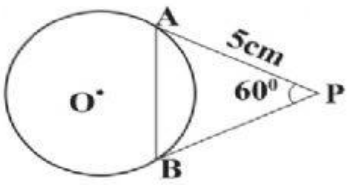
A. There are exactly two tangents that can be drawn to a circle from a point lying outside the circle.

B. There is only one tangent passing through a point lying on a circle.

C. Only two tangents can be drawn from a point lying inside a circle.

D. The lengths of the tangents drawn from an external point to a circle are equal.

32 **In the given figure PA and PB are the tangents to a circle with centre 'O'. If PA=5cm and $\angle APB=60^0$ then the length of the chord AB is :**



A. $5\sqrt{2}$ cm

B. $5\sqrt{3}$ cm

C. 5cm

D. 5.2cm

33 **The angle between the two radius of a circle is 130^0. Then the angle between the tangents drawn at the ends of the radii is**

A. 65^0 B. 40^0

C. 70^0 D. 50^0

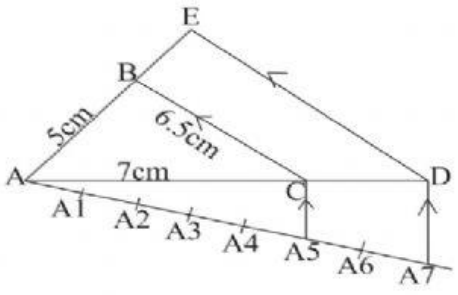
34 **A student construted a triangle ABC with sides AB=5cm, BC=6.5cm and AC=7cm and then constructed a ΔADE similar to ΔABC such that each of its sides are $\frac{5}{7}$ of the corresponding sides of ΔABC.The length of AD and AE obtained by calculation are respectively equal to**

A 7cm and 9.8cm

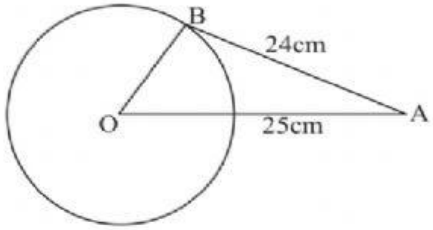
B. 3.4cm and 6.5cm

C. 6.5cm and 9.8cm

D. 10cm and 11.5cm



35 **'O' is the centre of the circle. The length of the tangent AB=24cm and if OA=25cm. the radius of the circle is**



A. 12cm

B. 7cm

C. 15cm

D. 16cm

36 **The curved surface area of a cylinder of radius 'r' cm and height 'h' cm is**

A. $2\pi r(r+h)cm^2$ B. $\pi r^2h\ cm^3$

C. $\frac{\pi r^2 h}{3} cm^3$ D. $2\pi rh\ cm^2$

37 **The relation between the slant height 'l' height 'h' and the radius of the cone 'r' is**

A. $l^2 = h^2 - r^2$ B. $l^2 = h^2 + r^2$

C. $h^2 = l^2 + r^2$ D. $l = \sqrt{h^2 - r^2}$

38 **The surface area of a sphere is 616 sqm. The surface area of its hemisphere is**

A. $205.6\ cm^2$ B. $308\ cm^2$

C. $1232\ cm^2$ D. $38\ cm^2$

39 **The perimeter of the base of a right circular cylinder is 44cm and its height is 10cm then its volume is**

A. $490\ \pi\ cm^3$ B. $440\ \pi\ cm^3$

C. $374\ \pi\ cm^3$ D. $980\ \pi\ cm^3$

40 **Prepare a cone from "model clay". When wet, cut it with a knife parallel to its base, remove the smaller cone obtained. The solid left is a**

A. Cylinder B. Cone

C. Sphere D. Frustum of a cone

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