DDPI OFFICE UDUPI- BEO OFFICE KUNDAPURA

SSLC

Multiple Choice Questions Based Model Question Paper – 02

2020-21

Subject : Mathematics

Medium : English

Code No : 81E **Time : 1 Hour**

Total No of Questions : 40 **Max.Marks : 40**

Four Choices are give for each of the questions/incomplete statements. Choose correct answer and shade the correct choice in the OMR given to you with blue/black ball point pen $\mathbf{40 \times 01 = 40}$

1) If a pair of linear equations is inconsistent , then the lines represented by these equations will be

A) Parallel B) coincident

C) intersecting or coincident D) intersecting always

2) The cost of 8 books and 5 pens is Rs 370. Represent this linear equation in two variables form.

A) $4x + 4y = 370$ B) $8x + 3y = 370$

C) $8x + 5y = 370$ D) $8x + 13y = 370$

3) If the pair of linear equations $x + 2y = 3$ and $2x + 4y = k$ are coincide then the value of $'k'$ is

A) 3 B) 6

C) -3 D) -6

4) In the equation $x + y = 7$,if $x = 3$,then the value of $'y'$ is

A) 2 B) 4

C) 6 D) 7

5) If the n^{th} term of an arithmetic progression $a_n = 3n - 2$, then its 9^{th} term

A) -25 B) 5

C) -5 D) 25

6) In an arithmetic progression, if $a_n = 2n + 1$, then the common difference of the given progression is

A) 0 B) 1

C) 2 D) 3

7) The first four terms of AP, whose first term is -2 and the common difference is -2 are

A) $-2,0,2,4$ B) $-2,4,-8,16$

C) $-2,-4,-6,-8$ D) $-2,-4,-8,-16$

8) If $18, x, y, -3$ are in AP, then the value of $x + y$ is

A) 12 B) 15

C) 16 D) 11

9) What is the sum of first n terms of the AP $a, a + d, a + 2d, a + 3d, \ldots . l$?

A) $\frac{n}{2}[a + l]$ B) $\frac{n}{2}[2a + l]$

C) $n[a + l]$ D) $n[2a + l]$

10) The factors of the quadratic equation $x^2 - 5x + 6 = 0$ are

A) $(x + 2)(x + 3)$ B) $(x - 5)(x - 6)$

C) $(x - 3)(x - 2)$ D) $(x + 3)(x - 2)$

11) One of the roots of the quadratic equation $x^2 - 81 = 0$ is

A) 7 B) 8

C) 9 D) 10

12) The values of a, b, c when the quadratic equation $7x^2 - 5x = 3$ is written in the standard form, are respectively,

A) $7, 3, 5$ B) $3, -5, 7$

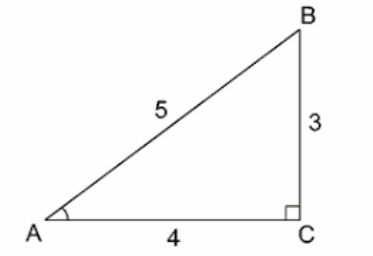
C) $7, 3, -5$ D) $7, -5, -3$

13) The maximum number of roots, that a quadratic equation can have

A) 4 B) 3

C) 2 D) 1

14) In the adjoining figure , the value of $\cos A$



A) $\frac{3}{4}$ B) $\frac{4}{5}$

C) $\frac{3}{5}$ D) $\frac{5}{4}$

15) Value of $\tan\theta - \cot(90° - \theta)$ is equal to

A) 1 B) 0

C) 2 D) -1

16) $1 + cot^2(90° - \theta)$ is equal to

A) $cos^2\theta$ B) $tan^2\theta$

C) $sec^2\theta$ D) $cose^2\theta$

17) The value of $\sin 90° - \tan 45°$ is

A) $\frac{1}{2}$ B) 0

C) 1 D) 2

18) The upper part of a tree is broken by the wind and makes an angle of 30° with the ground. The distance from the the foot of the point where the top touches the ground is 5 m The height of the tree is

A) $\sqrt{3}\,m$ B) $\frac{5}{\sqrt{3}}m$

C) $\frac{10}{\sqrt{3}}m$ D) $\frac{15}{\sqrt{3}}m$

19) The angle formed by the line of sight with the horizontal when the object is above the the horizontal level, that is when we raise our head to look at the object is

A) angle of elevation B) angle of depression

C) line of sight D) horizontal level

20) The distance of the point $P\ (\ 3, 4\ )$ from x-axis is

A) 3 units

B) 4 units

C) 5 $units$

D) 7 units

21) The distance between the origin and the point $(\ -\ 12, 5\ )$ is

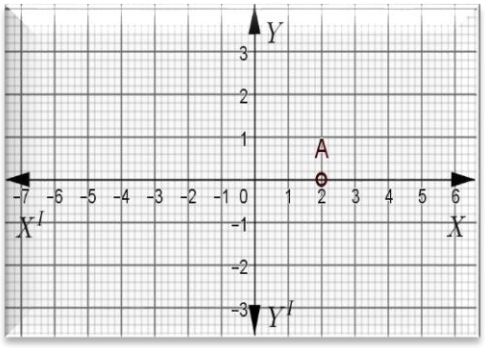
A) 13 units

B) $-$ 12 units

C) 10 $units$

D) 5 units

22) In the given graph. The co-ordinate of point A is :



A) $(-1,0)$

B) $(1,-1)$

C) $(0,2)$

D) $(2,0)$

23) The distance between the point $(\ x_1, y_1)$ and $(x_2, y_2\ )$ is

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

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

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

D) $\sqrt{(x_2 + x_1)^2 + (y_2 + y_1)^2}$

24) The mean of 5,15,8,12,13,7 is

A) 60

B) 70

C) 10

D) 30

25) Using this formula to find the mode of grouped data

A) $l - \left[\frac{f_1 - f_0}{2f_1 - f_0 - f_2}\right] \times h$

B) $l + \left[\frac{f_1 + f_0}{2f_1 - f_0 - f_2}\right] \times h$

C) $l + \left[\frac{f_1 - f_0}{2f_1 + f_0 - f_2}\right] \times h$

D) $l + \left[\frac{f_1 - f_0}{2f_1 - f_0 - f_2}\right] \times h$

26) The mode and mean of given data are 9 and 6 respectively, then the median is

A) 6.5

B) 7

C) 7.5

D) 8

27) If ABC and DEF are two triangles and $\frac{AB}{DE} = \frac{BC}{FD}$, then the two triangles are similar if

A) $\angle A = \angle F$

B) $\angle B = \angle D$

C) $\angle A = \angle D$

D) $\angle B = \angle E$

28) Sides of two similar triangles are in the ratio 4 : 9. Areas of these triangles are in the ratio

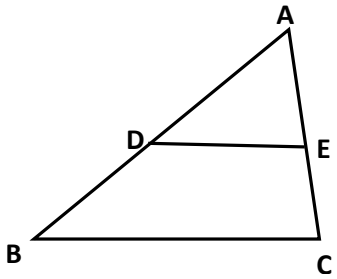
A) 2: 3

B) 4: 9

C) 81: 16

D) 16: 81

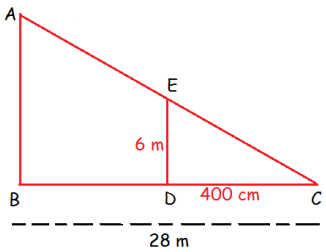
29) In the following triangle ABC, $\angle B = 70°$, $\angle BDE = 110°$, $BC = 5\ cm$, $AE = 3\ cm$ and $CE = 3\ cm$. Then the length of DE is



A) $5\ cm$ B) $2.5\ cm$

C) $10\ cm$ D) $3\ cm$

30) A vertical stick of length 6 m casts a shadow $400\ cm$ long on the ground and at the same time a tower casts a shadow $28\ m$ long. The height of the tower is.



A) $\frac{6}{7}\ m$ B) $\frac{56}{3}\ m$

C) $42\ m$ D) $28\ m$

31) The length of the tangent drawn to a circle from a point Q is $24\ cm$. The length between the point Q and the centre of the circle is $25\ cm$. Then the radius of the circle is

A) $7\ cm$ B) $12\ cm$

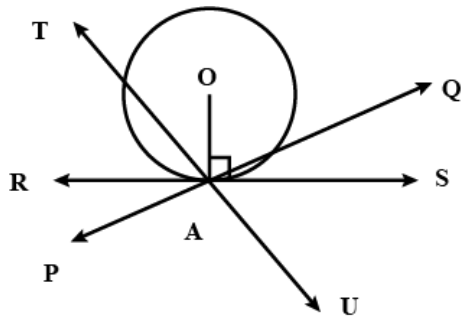
C) $15\ cm$ D) $24.5\ cm$

32) The length of the biggest chord of a circle is 10 cm. The length of the radius is

A) 10 cm B) 5 cm

C) 20 cm D) 25 cm

33) In the figure the tangent is



A) TU B) PQ

C) OA D) RS

34) A pair of tangents can be constructed from a point P to a circle of radius 3.5 cm situated at a distance____from the centre

A) 5 cm B) 2 cm

C) 3 cm D) 3.5 cm

35) To construct a triangle ABC and then a triangle similar to it whose sides are $\frac{2}{3}$ of the corresponding sides of the first triangle. A ray AX is drawn where multiple points at equal distances are located. The last point to which B will meet the ray AX will be

A) A_1 B) A_2

C) A_3 D) A_4

36) The formula to find the lateral surface area of a frustum of a cone is

A) $\pi(r_1 + r_2)h$ B) $\pi(r_1 - r_2)h$

C) $\pi(r_1 + r_2)l$ D) $\pi(r_1 - r_2)l$

37) If the volume of a cube is 64 cm^3 then the length of its edges is

A) 8 cm B) 16 cm

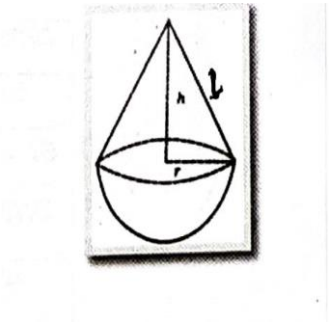
C) 4 cm D) 32 cm

38) If the area of the base of a cylinder is 38 cm^2 and height 4cm, then the volume of the cylinder is

A) 152 cm^3 B) 9.5 cm^3

C) 132 cm^3 D) 144 cm^3

39) The total surface area of the article in the given figure is



A) $3\pi r^2 + \pi rl$ B) $2\pi r^2 + \pi rl$

C) $2\pi rh + \frac{2}{3}\pi r^3$ D) $\pi r^2 h + \pi rl$

40) If the volume of two spheres is in the ratio 27: 64, then the ratio of their radii is

A) 3: 4 B) 4: 32

C) 1: 4 D) 3: 8