DDPI OFFICE UDUPI- BEO OFFICE KUNDAPURA

SSLC

Multiple Choice Questions Based Model Question Paper – 03

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 $40 \times 01 = 40$

1) If 3x+y=10 and y=4 ,then the value of x

A) 0 B) 1

C) 2 D) 3

2) Which of the pair of linear equation has no solution

A) $x + 3y = 3, \quad 3x + 9y = 7$

B) $2x + y = 5, \quad 3x + 2y = 8$

C) $3x + 5y = 20, \quad 6x + 10y = 40$

D) $x + y = 8, \quad x - y = 2$

3) For what value of $'p'$ does the pair of linear equations given below have unique solution? $4x + py + 8 = 0$ and $2x + 2y + 2 = 0$

A) $p \neq 8$ B) $p \neq 6$

C) $p = 4$ D) $p \neq 4$

4) For what value of $'p'$ the system of equations $4x + py + 8 = 0$ and $2x + 2y + 2 = 0$ have no solution

A) p = 8 B) $p = 6$

C) p = 4 D) $p = 2$

5) If the n^{th} term of an arithmetic progression $a_n = 24 - 3n$, then its 2^{nd} term is

A) 18 B) 15

C) 0 D) 2

6) If a, b and c are in Arithmetic progression then $\frac{b-a}{c-b}$ is equal to

A) $\frac{b}{a}$ B) 0

C) 1 D) $2a$

7) The 30^{th} term of 10,7,4, ...is

A) -87 B) 87

C) 77 D) -77

8) Find the sum of first 20 terms of the AP 3,3,3,3 ...

A)30 B) 60

C) 90 D) 120

9) Which of the following statement is wrong regarding the quadratic equation $ax^2 + bx + c = 0$:

A) Roots are equal if, $b^2 - 4ac = 0$

B) Roots are not real if, $b^2 - 4ac < 0$

C) Roots are real and different if, $b^2 - 4ac > 0$

D) Roots are equal if, $b^2 - 4ac < 0$

10) The degree of a quadratic equation is

A) 1 B) 2

C) 3 D) 4

11) Roots of the quadratic equation $m^2 + 2m - 3 = 0$ are

A) $-3, 1$ B) $2, -3$

C) $3, -1$ D) $3, -2$

12) The discriminant of a quadratic equation is

A) $b^2 - 2ac$ B) $b^2 - ac$

C) $b^2 - 4ac$ D) $a^2 - 4bc$

13) Choose the quadratic equation among these

A) $x\,(x + 1) = 0$ B) $2x + 7 = y$

C) $x^2 - x(x + 4) = 0$ D) $2(x - 3) = 0$

14) If $\tan A = \frac{4}{3}$ then the value of cosA is

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

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

15) The value of $\sin 90° + \tan 45°$ is

A) 1 B) 0

C) 2 D) 3

16) $15 \cot A = 8$ then $\tan A$ value is

A) $\frac{8}{17}$ B) $\frac{15}{8}$

C) $\frac{8}{15}$ D) $\frac{15}{17}$

17) A circus artist climbing a 20 m rope which is tightly stretched and tied from the top of a vertical pole to the ground. If the angle made by the rope with the ground level is 30°. The height of the pole is

A) 10 m B) 20 m

C) 40 m D) $\frac{20}{\sqrt{3}}$

18) If the length of the shadow of a tree is decreasing then the angle of elevation

A) increasing B) decreasing

C) remains same D) none of the above

19) The distance between the points (2, 3) and (6, 6) is

A) 5 units B) 7 units

C) 9 $units$ D) 10 units

20) The coordinates of the point of intersection of $x-axis$ and $y-axis$ are

A) (0,0) B) (0,1)

C) (1,0) D) (1,1)

21) Find the ratio in which the point (4,8) divides the line segment joining the points (5,7) and (3,9)

A) 1: 1 B) 1: 2

C) 1: 2 D) 1: 3

22) The perimeter of the triangle with vertices (0,0), (3,0) and (0,4) is

A) $7+\sqrt{5}$ B) 5

C) 10 D) 12

23) If the following figure represents "less than type" and "more than type" of ogive graph,then the median is

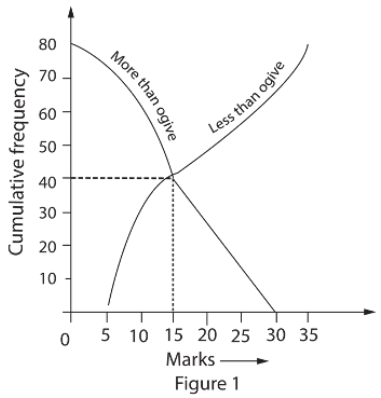


Figure 1

A) 5 B) 15

C) 30 D) 35

24) $\sum f_i x_i = 325$ and $\sum f_i = 25$ then the mean is

A) 13 B) 15

C) 10 D) 25

25) The mode of the scores 12,11,10,8,11,13,11,15,12 is

A) 10 B) 15

C) 11 D) 12

26) The area of two similar triangles are 25 cm^2 and 81 cm^2 respectively. The ratio of their corresponding sides is

A) 5: 9 **B)** 9: 5

C) 5: 4 **D)** 4: 5

27) If triangles ABC and DEF are similar $2AB = DE$ and $BC = 8cm$, then EF is equal to

A) 4 cm B) 8 cm

C) 12 cm D) 16 cm

28) If ABC is an equilateral triangle such that AD is perpendicular to BC, then AD^2 is equal to

A) 4 CD^2 B) 3 CD^2

C) 2 CD^2 D) 1 CD^2

29) Two circles are always

A) similar but may not be congruent **B)** congruent

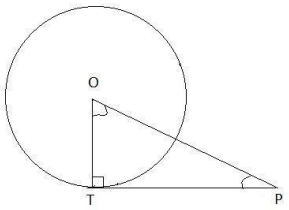
C) neither similar nor congruent **D)** none of these

30) Number of tangents drawn to a circle at any point on the circle is

A) 1 B) 2

C) 3 D) 4

31) If the figure $'O'$ is the centre of the circle . PT is the tangent. If $\angle TPO = 30°$ then $\angle POT$ is



A) 30° B) 60°

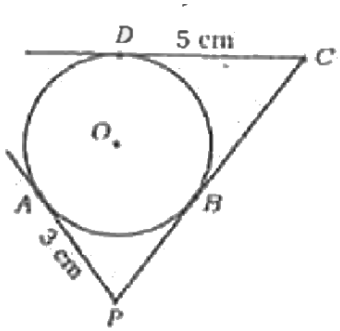
C) 90° D) 120°

32) Angle between the radius and tangent at the point of intersect is

A) 30° B) 60°

C) 90° D) 180°

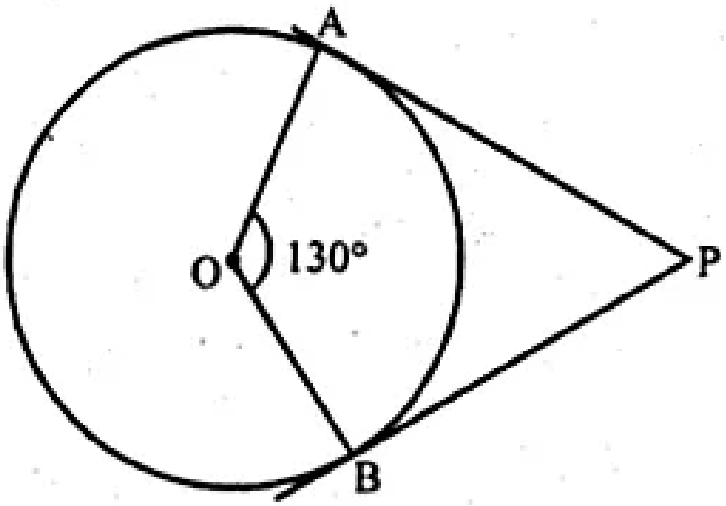
33) PA, PC and CD are tangents drawn to a circle with centre $'O'$. $AP = 3\ cm$, $CD = 5\ cm$ then the length of PC is



A) 3 cm B) 5 cm

C) 8 cm D) 2 cm

34) In the figure, if $\angle AOB = 130°$,then $\angle APB =$



A) 90° B) 60°

C) 50° D) 80°

35) To divide the line segment AB of length 7.6 cm in the ratio 5:8. A ray AX is drawn first such that $\angle BAX$ forms an acute angle and then the points A_1, A_2, A_3 ...are located at equal distance on the ray AX. The point B is joined to

A) A_5 B) A_8

C) A_{10} D) A_{13}

36) The formula to find volume of a sphere is

A) $\frac{2}{3}\pi r^3$ B) $\frac{4}{3}\pi r^3$

C) $\pi r^2 h$ D) $\frac{1}{3}\pi r^3$

37) A cylinder of volume 156 cm^3 is melted to form three cones with equal base and height ,then the volume of each cone is

A) 78 cm^3 B) 56 cm^3

C) 52 cm^3 D) 156 cm^3

38) The lateral surface area of a cone with base radius 5cm and slant height 7cm is

A) 110 cm^2 B) 220 cm^2

C) 330 cm^2 D) 440 cm^2

39) A vessel is in the shape of a cylinder surmounted on a hemisphere. The surface area of the vessel is

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

C) $2\pi r^2 + 2\pi rh$ D) $\pi r^2 + 2\pi rh$

40) The circumference of a circle is 88cm, then its radius is

A) 7 cm B) 14 cm

C) 21 cm D) 28 cm