# DDPI OFFICE UDUPI- BEO OFFICE KUNDAPURA

## SSLC

## Multiple Choice Questions Based Model Question Paper – 04

**2020-21**

## Subject : Mathematics

**Medium : English**

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

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

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**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 the line given by x + y + 5 = 0 and 3x + ky + 6 = 0 are parallel then the value of $'k'$

A) 3 B) 6

C) 5 D) 1

2) Two lines are given to be parallel the equation of one of the lines is $4x + 3y = 5$, then one of the possible second parallel line is

A) $2x + 6y = 6$ B) $3x + 4y = 6$

C) $8x + 6y = 6$ D) $2x + 3y = 5$

3) How many number of solutions are there to the pair of linear equation $2x + 3y = 9$ and $4x + 6y = 18$

A) one solution B) infinitely many solutions

C) no solutions D) two solutions

4) The lines representing $2x + 3y - 9 = 0$ and $4x + 6y - 18 = 0$ are

A) Intersecting lines B) perpendicular lines

C) parallel lines D) coincident lines

5) The next term of the AP : $3,1,-1,-3$ ...is

A) 5 B) $-4$

C) $-5$ D) 0

6) If $a, b, c$ are in AP, then

A) $2b = a + c$ B) $b = a + c$

C) $b = ac$ D) $b = \sqrt{ac}$

7) How many two-digit numbers are divisible by 3 ?

A) 10 B) 20

C) 30 D) 40

8) What is the sum of first $n$ natural numbers

A) $\frac{n(n+1)}{2}$ B) $n^2$

C) $\frac{n(n-1)}{2}$ D) $\frac{n(n+2)}{2}$

9) The fourth term of the AP is 4. The the sum of the first 7 terms is

A)4 B) 28

C) 16 D) 40

10) If the quadratic equation $x^2 + px + 4 = 0$ has two equal roots, then the value of '$p$' is

A) 3 B) 4

C) 5 D) 6

11) The discriminant of the quadratic equation $5x^2 - 3x + 1 = 0$ is

A) $-5$ B) $-7$

C) $-9$ D) $-11$

12) If the roots of the quadratic equation $x^2 - 8x + m = 0$ are equal, then the value of 'm' is

A) 4 B) 8

C) 12 D) 16

13) The roots of the quadratic equation $x^2 + 7x = 0$ are

A) $0, -7$ B) 0,7

C) $7, -7$ D) $-7, -7$

14) $cosec^2\theta - cot^2\theta$ is equal to

A) $-1$ B) 1

C) 0 D) 2

15) If $5\cos A = 3$ then the value of $\sec A$ is

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

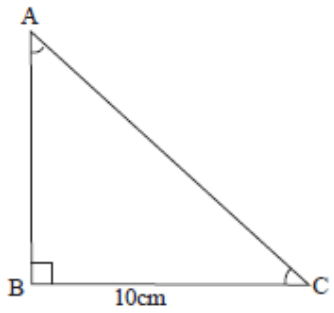
C) $\frac{4}{3}$ D) $\frac{4}{5}$

16) $\sin 60° \times \cos 30°$ is equal to

A) $\frac{1}{4}$ B) $\frac{\sqrt{3}}{4}$

C) $\frac{3}{4}$ D) $\frac{1}{2}$

17) In the figure $\angle B = 90°, \angle A = \angle C$ and $BC = 10\ cm$ then the value of $\tan 45°$ is




A) 0 B) 1

C) 2 D) $\frac{1}{2}$

18) The distance of the point $(\alpha, \beta)$ from origin is

A) $\alpha + \beta$ B) $\alpha^2 + \beta^2$

C) $\sqrt{\alpha^2 - \beta^2}$ D) $\sqrt{\alpha^2 + \beta^2}$

19) In which quadrant does the point $(3, -3)$ lie ?

A) $I$ B) II

C) $III$ D) IV

20) The area of the triangle whose vertices are (2,3), (2,4) and (2,5) is

A) 0 sq.units B) 2 sq.units

C) 6 sq.units D) 12 sq.units

21) The coordinates of the point which divides the join of $(x_1, y_1)$ and $(x_2, y_2)$ in the ratio $m_1 : m_2$ internally , are

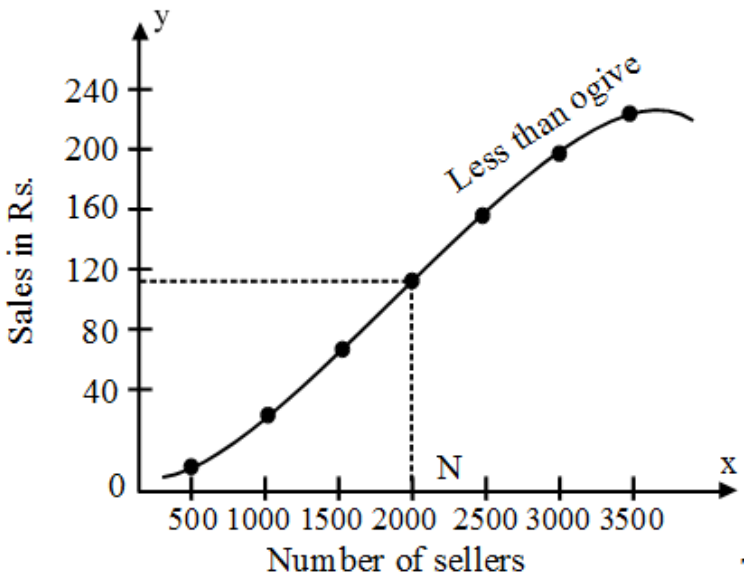
A) $\left(\frac{m_1x_2+m_2x_1}{m_1+m_2}, \frac{m_1y_2+m_2y_1}{m_1+m_2}\right)$

B) $\left(\frac{m_1x_2-m_2x_1}{m_1-m_2}, \frac{m_1y_2-m_2y_1}{m_1-m_2}\right)$

C) $\left(\frac{m_1x_2+m_2x_1}{m_1-m_2}, \frac{m_1y_2+m_2y_1}{m_1-m_2}\right)$

D) $\left(\frac{m_1x_2-m_2x_1}{m_1+m_2}, \frac{m_1y_2-m_2y_1}{m_1+m_2}\right)$

22) If the following figure represents less than type of ogive graph then the median is




A) 1500 B) 3500

C) 3000 D) 2000

23) The size of class intervals of $20-40, 40-60, 60-80$ is

A) 10 B) 20

C) 30 D) 40

24) The mean and median of given data are 20 and 22 repectively,then the mode is

A) 20 B) 26

C) 22 D) 21

25) All squares are

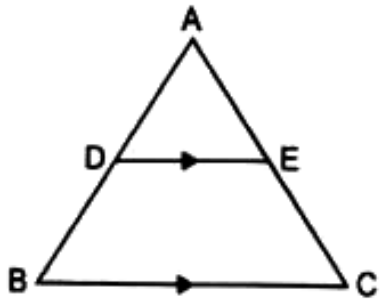
A) similar but may not be congruent

B) congruent

C) neither similar nor congruent

D) none of these

26) In the figure in $\Delta ABC$ $DE \parallel BC, AD = 1\ cm, AE = 2\ cm$ and $EC = 6\ cm$ Find the length of $DB$




**A)** 2 $cm$ **B)** 4 $cm$

**C)** 3 $cm$ **D)** 6 $cm$

27) A vertical pole of length 12 $m$ casts a shadow 8 $m$ long on the ground and at the same time a tower casts a shadow 40 $m$ long .Find the height of the tower.

A) 60 $m$ B) 40 $m$

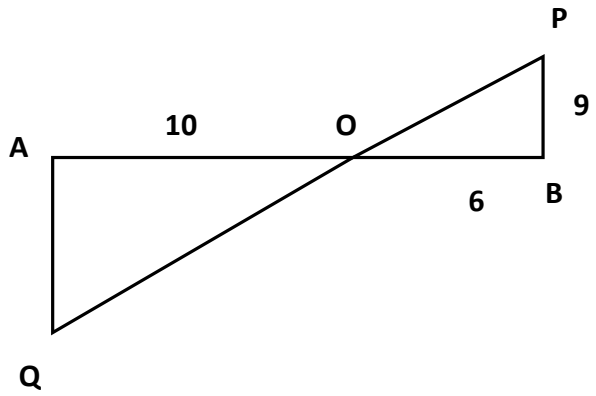
C) 50 $m$ D) 80 $m$

28) The length of the diagonal of a square is $7\sqrt{2}$ cm .Then ,the area of the square in $cm^2$ is

A) 28 B) $14\sqrt{2}$

C) 21 D) 49

29) In the following figure $QA$ and $PB$ are perpendicular to $AB$. Then the length of $AQ$ is




A) 5 $units$ B) 8 $units$

C) 9 $units$ D) 15 $units$

30) A tangent is drawn from a point 13 $cm$ away from the centre of the circle whose radius is 5 cm. then the length of the tangents is

A) 3 $cm$ B) 8 $cm$

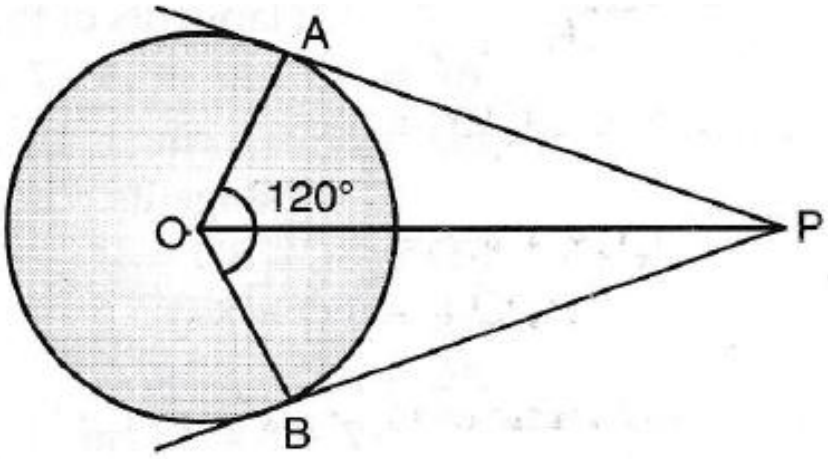
C) 12 $cm$ D) 17 $cm$

31) A tangent intersect the circle at ____point

A) 1 B) 2

C) 3 D) 4

32) In the figure $\angle AOB = 120°$ then $\angle APO$




A) 30° B) 60°

C) 90° D) 120°

33) A straight line passing through a point on a circle is

A) *a tangent* B) *a secant*

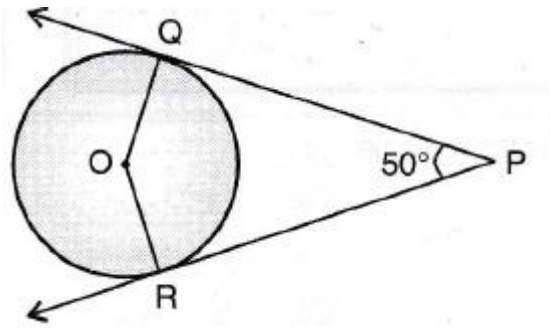
C) *a radius* D) *a diameter*

34) To construct a triangle similar to given $\Delta PQR$ with it sides $\frac{9}{5}$ of the corresponding sides of a $\angle RQX$ is an acute angle . The minimum number of points to be located at equal distances on ray $QX$ is

A) 5 B) 9

C) 10 D) 14

35) In the figure the measure of $\angle PQO$ is




A) 130°  B) 90°

C) 65°  D) 80°

36) If the volume of a cylinder is 300 cm$^3$ , the volume of a cone having same radius and height as that of the cylinder is

A) 900 $cm^3$  B) 600 $cm^3$

C) 150 $cm^3$  D) 100 $cm^3$

37) The formula to find the volume of a frustum of a cone is

A) $\frac{1}{3}\pi h({r_1}^2 + {r_2}^2 + r_1 r_2)$  B) $\frac{1}{3}\pi h(r_1 + r_2 + r_1 r_2)$

C) $\frac{1}{3}\pi h(r_1 + r_2 + 2r_1 r_2)$  D) $\frac{1}{3}\pi h({r_1}^2 + {r_2}^2 + 2r_1 r_2)$

38) A capsule is in the shape of a cylinder with hemisphere attached to both the base. The total surface area of the capsule

A) $2\pi r^2 + 2\pi rh$  B) $4\pi r^2 + \pi r^2 h$

C) $4\pi r^2 + 2\pi rh$  D) $\pi r^2 + 2\pi rh$

39) The radius of a sphere whose surface area is 616 $cm^2$

A) 8 $cm$ B) 7 $cm$

C) 9 $cm$ D) 6 $cm$

40) A solid is in the shape of a cone mounted on a cylinder with both their radii equal to 4cm.If the total height of the solid is 8cm and height of the cylinder is 5cm, then the slant height of the cone is

A) 3 $cm$ B) 4 $cm$

C) 5 $cm$ D) 6 $cm$