

DDPI OFFICE UDUPI- BEO OFFICE KUNDAPURA

SSLC

Multiple Choice Questions Based Model Question Paper – 01

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) The pair of linear equations $x = 0$ and $y = 0$ has
 - A) one solution
 - B) two solutions
 - C) infinitely many solutions
 - D) no solutions
- 2) One equation of a pair of dependent linear equation is $x + 2y = 4$. The second equation can be
 - A) $x + 3y = 5$
 - B) $2x + 4y = 5$
 - C) $2x + 4y = 8$
 - D) $4x + 2y = 8$
- 3) For what value of k , do the equations $x + 2y = 4$ and $3x + ky = 12$ represent coincident lines?
 - A) 2
 - B) 3
 - C) 4
 - D) 6
- 4) If the pair of linear equations $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ has a unique solution, then
 - A) $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$
 - B) $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$
 - C) $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$
 - D) $\frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

- 5) The solution of the pair of linear equations $x + y = 5$ and $x - y = 1$ is
- A) $x = 2, y = 3$ B) $x = 3, y = 2$
- C) $x = 5, y = 1$ D) $x = 3, y = 5$
- 6) The n^{th} term of an arithmetic progression is $a_n = 4n + 5$ then the 3rd term is :
- A) 5 B) 9
- C) 13 D) 17
- 7) 2, x , 14 are in Arithmetic progression, then the value of x is :
- A) 28 B) 16
- C) 7 D) 8
- 8) The sum of first 20 natural numbers is
- A) 142 B) 210
- C) 254 D) 310
- 9) What is the common difference of an AP in which $a_{24} - a_{17} = -28$?
- A) 8 B) -8
- C) -4 D) 4
- 10) The roots of quadratic equation $(x - 4)(2x - 1) = 0$ are
- A) $\frac{1}{2}, 4$ B) 4, $-\frac{1}{2}$
- C) -4, $-\frac{1}{2}$ D) $\frac{1}{2}, -4$
- 11) The sum of the the squares of consecutive natural numbers is 13. The quadratic equation of this statement is
- A) $x^2 + x + 13 = 0$ B) $x^2 - x - 6 = 0$
- C) $x^2 + x - 6 = 0$ D) $x^2 - x + 25 = 0$

12) Standard form of a quadratic equation is

A) $ax + bx^2 - c = 0$

B) $ax^2 + by + c = 0$

C) $ax^2 + bx + c = 0$

D) $bx^2 + c = a$

13) The determinant of the quadratic equation $3x^2 - 5x + 2 = 0$ is

A) 1

B) 2

C) 3

D) 4

14) If $13 \sin \theta = 12$ then the value of $\operatorname{cosec} \theta$ is

B) $\frac{12}{5}$

B) $\frac{13}{5}$

C) $\frac{12}{13}$

D) $\frac{13}{12}$

15) Value of $\frac{1 - \tan^2 45^\circ}{1 + \tan^2 45^\circ}$ is

A) $\tan 90^\circ$

B) 1

C) $\sin 45^\circ$

D) 0

16) Value of $\cos 48^\circ - \sin 42^\circ$ is

A) 1

B) 0

C) 2

D) -1

17) $10 \sec^2 A - 10 \tan^2 A$ is equal to

A) 1

B) 9

C) 10

D) -10

18) The shadow of a tower is equal to its height. The sun's altitude is

- A) 30°
B) 45°
C) 60°
D) 90°

19) The distance of the point $P (3, 4)$ from y -axis is

- A) 3 units
- B) 4 units
- C) 5 units
- D) 7 units

20) The distance between the origin and co-ordinates of a point (x, y) is

- A) $x^2 + y^2$ B) $\sqrt{x^2 - y^2}$
C) $x^2 - y^2$ D) $\sqrt{x^2 + y^2}$

21) If P is the mid-point of the line segment joining $A (1, 4)$ and $B (3, 6)$ then the co-ordinates of P is

- A) (4,10) B) (2,10)
- C) (2,5) D) (4,5)

22) If the points $(0,0)$, $(a, 0)$, $(0, b)$ are collinear , then

- A) $a = b$
B) $a + b = 0$
C) $ab = 0$
D) $a \neq 0$

23) The empirical relationship between the three measures of central tendency is

- A) $2 \text{ Median} = \text{Mode} + 3\text{Mean}$
- B) $3 \text{ Median} = \text{Mode} + 2\text{Mean}$
- C) $\text{Median} = \text{Mode} + \text{Mean}$
- D) $\text{Median} = \text{Mode} - \text{Mean}$

24) The median of the scores 5,8,14,16,19 and 20 is

A) 14

B) 16

C) 15

D) 8

25) The modal class in the following frequency distribution is

Class Interval	Frequency
5 – 15	2
15 – 25	3
25 – 35	6
35 – 45	5
45 – 55	4

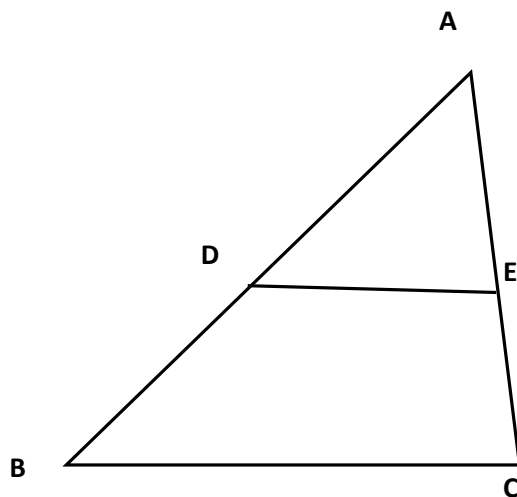
A) 15 – 25

B) 25 – 35

C) 35 – 45

D) 45 – 55

26) D and E are the midpoints of side AB and AC of a triangle ABC , respectively and $BC = 6\text{ cm}$. If $DE \parallel BC$, then the length of DE is



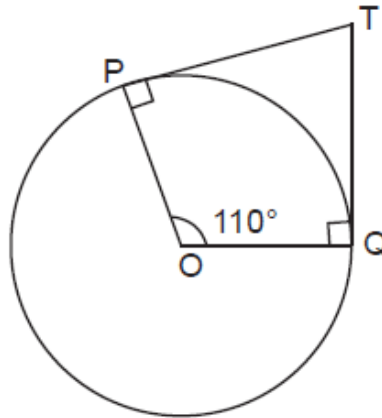
A) 2.5 cm

B) 3 cm

C) 5 cm

D) 6 cm

- 33) In the figure TP and TQ are tangents to a circle with centre ' O '. If $\angle POQ = 110^\circ$ then $\angle PTQ$ is equal to



- A) 60° B) 70°
C) 80° D) 90°
- 34) To divide a line segment AB in the ratio 3: 4 ,first a ray AX is drawn so that $\angle BAX$ is an acute angle and then at equal distance points are marked on the ray AX such that the minimum number of points. These points is
- A) 3 B) 4
C) 7 D) 9
- 35) Two draw a pair of tangents to a circle which are inclined to each other at an angle of 60° ,it is required to draw tangents at end points of those two radii of the circle. The angle between then should be
- A) 135° B) 90°
C) 60° D) 120°
- 36) The formula to find total surface area of a cylinder is
- A) $2\pi rh$ B) $2\pi r(r + h)$
C) $2\pi r^2$ D) $2\pi r^2 h$

37) The volume of two cubes is in the ratio 64 : 125. The ratio of their total surface areas is

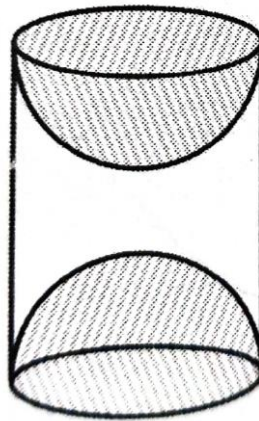
A) 16: 25

B) 4: 5

C) 4: 6

D) 8: 25

38) A wooden article is made by scooping out hemisphere from each end of the solid cylinder. The total surface area of the article is



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

B) $2\pi rh + \pi r^2$

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

D) $2\pi r(r + h)$

39) If the volume of a cone is 72 cm^3 then the volume of a cylinder with same base and height as that of the cone is

A) 524 cm^3

B) 616 cm^3

C) 144 cm^3

D) 216 cm^3

40) Surface area of a sphere of radius 7 cm is

A) 616 cm^2

B) 161 cm^2

C) 49 cm^2

D) 132 cm^2