Question1: The radius of a hemispherical balloon increases from 6 cm to 12 cm as air is being pumped into it. The ratios of the surface areas of the balloon in the two cases is

- a) 1 : 4
- b) 1 : 3
- c) 2 : 3
- d) 2 : 1

Question2: In a survey of 364 children aged 19-36 months, it was found that 91 liked to eat potato chips. If a child is selected at random, the probability that he/she does not like to eat potato chips is :

- a) 0.25
- b) 0.50
- c) 0.75
- d) 0.80

Question3: The length of the longest pole that can be put in a room of dimensions (10 m × 10 m × 5m) is

- a) 15 m
- b) 16 m
- c) 10 m
- d) 12 m

Question4: Point (0, –7) lies

- a) on the x –axis
- b) in the second quadrant
- c) on the y-axis
- d) in the fourth quadrant

Question5: If AB = QR, BC = PR and CA = PQ, then

- a) Δ ABC ≅ Δ PQR
- b) Δ CBA ≅ Δ PRQ
- c) Δ BAC ≅ Δ RPQ
- d) Δ PQR ≅ Δ BCA

Question6: AD is a diameter of a circle and AB is a chord. If AD = 34 cm, AB = 30 cm, the distance of AB from the centre of the circle is:

- a) 17 cm
- b) 15 cm
- c) 4 cm
- d) 8 cm

Question7: A linear equation in two variables is of the form ax + by + c = 0, where

- a) $a \neq 0$, $b \neq 0$
- b) $a = 0$, $b \neq 0$
- c) $a \neq 0$, $b = 0$
- d) $a = 0$, $c = 0$

Question8: The class mark of the class 90-120 is :

- a) 90
- b) 105
- c) 115
- d) 120

Question9: The number of planks of dimensions (4 m × 50 cm × 20 cm) that can be stored in a pit which is 16 m long, 12m wide and 4 m deep is

- a) 1900
- b) 1920
- c) 1800
- d) 1840
-

Question10: The lateral surface area of a cube is 256 m^2. The volume of the cube is

- a) 512 m^3
- b) 64 m^3
- c) 216 m^3
- d) 256 m^3

Question11: 9sec^2 A – 9 tan^{2}A is :

- a) 1
- b) 9
- c) 8
- d) 0
-

Question12: Point (–3, 5) lies in the

- a) first quadrant
- b) second quadrant
- c) third quadrant
- d) fourth quadrant

Question13: If Δ ABC ≅ Δ PQR and Δ ABC is not congruent to Δ RPQ, then which of the following is not true:

- a) BC = PQ
- b) AC = PR
- c) QR = BC
- d) AB = P

Question14: ABCD is a cyclic quadrilateral such that AB is a diameter of the circle circumscribing it and ∠ADC = 140º, then ∠BAC is equal to:

- a) 80º
- b) 50º
- c) 40º
- d) 30º

Question15: The linear equation 3x – y = x – 1 has :

- a) A unique solution
- b) Two solutions
- c) Infinitely many solutions
- d) No solution

Question16: The width of each of five continuous classes in a frequency distribution is 5 and the lower class-limit of the lowest class is 10. The upper class-limit of the highest class is:

- a) 15
- b) 25
- c) 35
- d) 40

Question17: In a cylinder, if radius is halved and height is doubled, the volume will be

- a) Same
- b) doubled
- c) halved
- d) four times

Question18: In a sample study of 642 people, it was found that 514 people have a high school certificate. If a person is selected at random, the probability that the person has a high school certificate is :

- a) 0.5
- b) 0.6
- c) 0.7
- d) 0.8

Question19: The total surface area of a cube is 96 cm^2. The volume of the cube is:

- a) 8 cm^3
- b) 512 cm^3
- c) 64 cm^3
- d) 27 cm^3

Question20: Point (–3, 5) lies in the

- a) first quadrant
- b) second quadrant
- c) third quadrant
- d) fourth quadrant

Question21: If Δ ABC ≅ Δ PQR and Δ ABC is not congruent to Δ RPQ, then which of the following is not true:

- a) BC = PQ
- b) AC = PR
- c) QR = BC
- d) AB = PQ

Question22: ABCD is a cyclic quadrilateral such that AB is a diameter of the circle circumscribing it and ∠ADC = 140º, then ∠BAC is equal to:

- a) 80º
- b) 50º
- c) 40º
- d) 30º

Question23: The linear equation $3x - y = x - 1$ has :

- a) A unique solution
- b) Two solutions
- c) Infinitely many solutions
- d) No solution

Question24: The width of each of five continuous classes in a frequency distribution is 5 and the lower class-limit of the lowest class is 10. The upper class-limit of the highest class is:

- a) 15
- b) 25
- c) 35
- d) 40

Question25: The total surface area of a cube is 96 cm^2. The volume of the cube is:

- a) 8 cm^3
- b) 512 cm^3
- c) 64 cm^3
- d) 27 cm^3

Question26 In a sample study of 642 people, it was found that 514 people have a high school certificate. If a person is selected at random, the probability that the person has a high school certificate is :

- a) 0.5
- b) 0.6
- c) 0.7
- d) 0.8

Question27: In a cylinder, if radius is halved and height is doubled, the volume will be

- a) Same
- b) doubled
- c) halved
- d) four times

Question28: The width of each of five continuous classes in a frequency distribution is 5 and the lower class-limit of the lowest class is 10. The upper class-limit of the highest class is:

- a) 15
- b) 25
- c) 35
- d) 40

Question29: Which of the following cannot be empirical probability of an event?

- a) 4/5
- b) 1
- c) 0
- d) 5/4

Question30: If the volume of a sphere is numerically equal to its surface area, then radius of the sphere is

- a) 1 unit
- b) 3 units
- c) 2 units
- d) 6 units

Question31: In a frequency distribution, the mid-value of a class is 20 and the width of the class is 8. then the lower limit of the class is

- a) 12
- b) 24
- c) 28
- d) 16

Question32: Equation of x-axis is

- a) $x = 0$
- b) $x = y$
- c) $y = 0$
- d) $x + y = 0$

Question33: The median of a triangle divides it into two

- a) triangles of equal area
- b) equilateral triangles
- c) right triangles
- d) isosceles triangles

Question34: Sum of exterior angles of a triangle is :

- a) 270°
- b) 306°
- c) 630°
- d) 360°

Question35: Which one is correct order of Cartesian plane for the points (4, −4), (−3, 2), (−5, − 7) and (6, 3)?

- a) I, II, III, IV
- b) IV, II, III, I
- c) III, II, I, IV
- d) II, III, IV, I

Question36: What is the remainder when polynomial $x^3 - ax^2 + 6x - a$ is divided by $(x - a)$?

- a) a
- b) 3a
- c) a/5
- d) 5a

Question37: What are the zeroes of the polynomial $x^2 - 16$?

- a) (4, −4)
- b) (−4, −4)
- c) (4, 4)
- d) None of these

Question38: A bag contains 7 red balls, 6 green balls, 4 black balls. A ball is drawn randomly from this bag. What is the probability of the drawn ball is to be white ball?

- a) 7/17
- b) 6/17
- c) 4/17
- d) 0

Question39: Find the area of equilateral triangle of side 4 cm.

- a) 4√3 cm
- b) 4√3 mm
- c) 3√4 cm
- d) 6cm

Question40: $[(64)^{1/2} \times (1/27)^{1/3}]^2$

- a) 2
- b) 9
- c) 9/2
- d) 2/9

Question41: If one root of the quadratic equation $x^2 - 4x + 1 = 0$ is $2 - \sqrt{3}$. The other root will be

- a) $2 + \sqrt{3}$
- b) 3
- c) $2 - \sqrt{3}$
- d) None of these

Question42: The product of the roots of then quadratic equation $2x^2 + 5x - 7 = 0$ is

- a) 5/2
- b) -7/2
- c) -5/2
- d) 7/2

Question43: Which is a quadratic equation

- a) $x+1/x=2$
- b) $x(x^2-1)=7$
- c) $\sqrt{x}(3x+2)=4$
- d) $x^2-1/x=1$

Question44: Which of the following number is rational

- a) $\sqrt{13}$
- b) $\sqrt{121}$
- c) $\sqrt{29}$
- d) NONE

Question45: The value of the variable in the equation $5(-7x+3) = x - 21$ is _____ .

- a) 1
- b) 2
- c) -1
- d) -2

Answer:

1.a	2.c	3.a	4.c	5.b	6.d	7.b
	8.b	9.b	10.a	11.b	12.b	13.a
	14.c	15.c	16.c	17.b	18.d	19.c
	20.b	21.a	22.c	23.c	24.c	25.c
	26.d	27.b	28.c	29.d	30.b	31.d
	32.c	33.a	34.d	35.b	36.d	37.a
	38.d	39.a	40.d	41.a	42.b	43.a
	44.b	45.a				