1. Divide 69 in to three parts which are in A.P and are such that the product of the first two parts s 483

(a) 21, 23, 25

(b) 21, 22, 23

(c) 31, 33, 35

(d) 31, 32, 33

2. The n^{th} element of the sequence 1,3,5,7…….. is

(a) n+1

(b) 2n+1

(c) 2n-1

(d) n-1

3. If an office clerk is fixed in the pay scale 3200 – 85 – 4900, when will he reach his maximum?

(a) 51^{st} year

(b) 44^{th} year

(c) 62^{nd} year

(d) 21^{st} year

4. A rubber ball dropped from the height of 50 m rebounds at every impact from the floor to a height half of that from which it has fallen. Find the total distance described by the time it comes to rest.

(a) 90 m

(b) 150 m

(c) 135 m

(d) 85 m

5. A G.P consists of even number of terms. The sum of all the terms is three times that of the odd terms. Find the common ratio.

(a) 2

(b) 3

(c) 4

(d) 5

6. On each birth day Mr. Kelvin gave his son square the amount of his age. Find the total amount Mr. Kelvin gave his son by the time he was 17 years old.

(a) $1885

(b) $1785

(c) $1985

(d) $2085

7. What month is 19 months after July?

(a) April (c) March

(b) May (d) February

8. A iron pillar is in the form of a cylinder of height 2.8m and 20 cm in diameter surmounted by a cone of height 42 cm. Find the weight of the pillar if 1 cu.cm of iron weighs 7.5 gm.

(a) 337.52 kg (c) 692.37 kg

(b) 532.23 kg (d) 725.65 kg

9. A cubic centimeter of iron is drawn in to a wire of diameter 3.5 mm. Find the length of the wire.

(a) 7.8 cm (c) 10.4 cm

(b) 9.8 cm (d) 11.2 cm

10. In a class of 50 students the number of students who passed in the various subjects is as follows: English 25, Mathematics 18, Science 14, English and Mathematics 8, Mathematics and Science 5, English and Science 7, all the three subjects 3. Find the number of students who failed in all the examinations.

(a) 10

(b) 9

(c) 8

(d) 7

11. $A-(BuC)$ =

(a) $(A-B)$ u $(A-C)$

(b) $(A-B)$ n $(A-C)$

(c) $(AuB) - (AuC)$

(d) (AnB) u (AnB)

12. What type of relation R defined by R = {(-1,2), (2,-1), (-1,-1), (2,2), (3,3)} on A = {-1,2,3}.

(a) Reflexive

(b) Equivalence

(c) Symmetric

(d) Transitive

13. In a shop three persons A, B and C purchased the following quantities of rice, wheat and sugar.

	Rice (Kg)	Wheat(Kg)	Sugar(Kg)
A	3	2	4
B	2	3	2
C	4	5	4

If they have paid respectively $140, $104 and $196 for the purchases made, find the cost of 1 kg of rice, wheat and sugar.

(a) $20, $12, $14

(b) $20, $15, $16

(c) $22, $19, $14

(d) $20, $18, $14

14. Find the remainder when $6x^4-11x^3+5x^2-7x+9$ is divided by $2x-3$.

(a) 0

(b) 2

(c) 1

(d) 3

15. Find the values of "a" and "b", if $3x^4+x^3+ax^2+5x+b$ is exactly divisible by (x+2) and (x-1).

(a) a = 7, b = 2

(b) a = -7, b = 2

(c) a = -7, b = -2

(d) a = 7, b = -2

16. Find the G.C.D of the following polynomials $x^3-9x^2+23x-15$ and $4x^2-16x+12$.

(a) x^2+4x-3

(b) x^2-4x-3

(c) x^2-4x+3

(d) x^2+4x+3

17. Find the values of "a" and "b" in the following, given that the polynomial are perfect squares.

$$9x^4+12x^3+40x^2+ax+b$$

(a) a = 24, b = 36

(b) a = 36, b = 24

(c) a = -24, b = 36

(d) a = -36, b = 24

18. Two trains leave a railway station. The first train travels due west and the second train due north. The first train travels 5 km per hour faster than the second train, If after 2 hours they are 50 km apart, find the average speed of each train.

(a) 22, 28

(b) 20, 15

(c) 12, 18

(d) 12, 30

19. Determine the nature of the roots of the equation $x^2-11x-30=0$.

(a) Real, Equal, Irrational

(b) Real, Unequal, Irrational

(c) Real, Unequal, Rational

(d) Imaginary

20. Form the equation whose roots are $(5+\sqrt{3})$ and $(5-\sqrt{3})$.

(a) $x^2+24x-5=0$

(b) $x^2-32x+14=0$

(c) $x^2-44x+3=0$

(d) $x^2-10x+22=0$

21. How many tangents can be drawn at any point on the circle?

(a) 3 (c) 1

(b) 2 (d) 0

22. A project has the following time schedule

Activity	1-2	1-6	2-3	2-4	3-5	4-5	6-7	5-8	7-8
Duration in days	7	6	14	5	11	7	11	4	18

(a) 43 (c) 36

(b) 38 (d) 21

23. Chords AB and CD cut at P out side the circle such that PC=15, CD=7, PA=12 find AB.

(a) 2 (c) 4

(b) 3 (d) 5

24. If the length of the diagonal of a square is $4\sqrt{2}$ m, then the length of the side is

(a) 1

(b) 2

(c) 3

(d) 4

25. Find the point which divides the line segment (-3,-4) and (-8,7) internally in the ratio 7:5.

(a) (-71/12, 19/12)

(b) (-71/12, 39/12)

(c) (-71/12, 29/12)

(d) (-71/12, 49/12)

26. The centroid of the triangle ABC is (3, -2). Find the vertex C if A and B are (1,-2) and (7,4) respectively.

(a) (-1,-8)

(b) (1,-8)

(c) (-1,8)

(d) (1,8)

27. Find the area of a triangle whose vertices are (4, 5), (4, 2) and (-2, 5).

(a) 9 sq. units

(b) 8 sq. units

(c) 7 sq. units

(d) 6 sq. units

28. The vertices of a triangle ABC are A(-2, 8), B(1, 2) and C(7,-8). Find the equation of the medial through A.

(a) 11x-6y+26 =0

(b) 11x+6y+26 =0

(c) 11x+6y-26 =0

(d) 11x-6y-26 =0

29. If the straight line 7x-5y=k passes through the point (1,1), what is k?

(a) 1

(b) 2

(c) 5

(d) 4

30. The two straight lines x=2y and 2x-4y+7=0 are

(a) Perpendicular

(c) Parallel

(b) intersecting at (0,0)

(d) None of these

31. Find the length of each side of a regular polygon of 12 sides is 20cm. Find the radius of its circumscribing circle.

(a) 36.689 cm

(c) 38.637 cm

(b) 35.698 cm

(d) 34.265 cm

32. The angle of depression of a stone on the ground from the top of a building is 60°. If the stone is at a distance of 50 meters away from the building, find the height of the building.

(a) 56.2 m

(c) 72.5 m

(b) 44.56 m

(d) 86.6 m

33. The point P is 15 cm away from the centre of a circle whose radius is 9 cm. Find the length of tangent drawn from the point P to the circle.

(a) 43 cm

(c) 12 cm

(b) 22 cm

(d) 34 cm

34. A sum of $1550 is lent out in to two parts, one at 8% and another one is at 6%. If the total annual income is $106, find the money lent at each rate.

(a) $650, $900

(c) $700, $925

(b) $610, $910

(d) $725, $935

35. Which is a better investment 3% per year compounded monthly or 3.2% per year simple interest? Given that $(1+0.0025)^{12} = 1.0304$

(a) Simple Interest

(c) Compound Interest

(b) Both are equal

(d) None of these

36. If the numerator of a fraction is increased by 2 and the denominator by 1, it becomes 1. Again if the numerator is decreased by 4 and the denominator by 2, it becomes $\frac{1}{2}$. Find the fraction.

(a) 1/8

(b) 7/8

(c) 3/8

(d) 5/8

37. Find the logarithm of 1728 to the base $2\sqrt{3}$.

(a) 8

(b) 4

(c) 6

(d) 9

38. If $\log_{10}2 = 0.3010$, find the value of $\text{Log}_5 2$.

(a) 0.4303

(b) 0.4304

(c) 0.4305

(d) 0.4306

39. Rounaq weighs 56.7 kg. If he reduces his weight in the ratio 7:6, find his new weight.

(a) 48.6 kg

(b) 47.6 kg

(c) 46.6 kg

(d) 45.6 kg

40. The ratio of the number of boys to the number of girls in a school of 720 students is 3:5. If 18 new girls are admitted in the school, find how many boys may be admitted so that the ratio of the number of boys to the number of girls may change to 2:3.

(a) 69

(b) 25

(c) 85

(d) 42

41. If $a/3 = b/4 = c/7$, then the value of $(a+b+c)/c$ is

(a) 8

(b) 4

(c) 6

(d) 2

42. The value of $Y^{a-b} \times Y^{b-c} \times Y^{c-a} \times Y^{-a-b}$

(a) $1/ Y^{a+b}$

(c) $-1/ Y^{a+b}$

(b) 1

(d) -1

43. A dealer sold three-fourth of his articles at a gain of 20% and the remaining at cost price. Find the gain earned by him in the whole transaction.

(a) 14.5%

(c) 15.5%

(b) 15%

(d) 16%

44. By selling an article, Michael earned a profit equal to one-fourth of the price he bought it. If he sold it for $375, what was the cost price.

(a) $300

(c) $226

(b) $363

(d) $200

45. A man has five friends. In how many ways can he invite one or more of his friends to dinner?

(a) 13

(b) 5

(c) 86

(d) 31

46. Find the number of different poker hands in a pack of 52 playing cards.

(a) 2598958

(b) 2598959

(c) 2598960

(d) 2598961

47. Find the Harmonic mean for the following data.

X	2	4	8	16
F	2	3	3	2

(a) 2.74

(b) 3.38

(c) 4.44

(d) 2.82

48. The weights of seven persons in kg are 46, 49.5, 52.5, 38, 45, 79.5, 84.5. Find the coefficient of range

(a) 0.430
(c) 0.379
(b) 0.244
(d) 0.525

49. A point is chosen at random inside a circle of radius 2. What is the probability that this point is nearer to the centre than to the circle.

(a) 1/4
(c) 3/14
(b) 5/4
(d) 7/15

50. Three dice are rolled once. What is the chance that the sum of the face numbers on the three dice is greater than 15.

(a) 5/108
(c) 3/108
(b) 7/108
(d) 11/108

Answers

1. a	2. c	3. d	4. b	5. a	6. b
7. d	8. c	9. c	10. a	11. b	12. b
13. a	14. d	15. c	16. c	17. a	18. b
19. b	20. d	21. c	22. c	23. a	24. d
25. c	26. b	27. a	28. c	29. b	30. c
31. c	32. d	33. c	34. a	35. a	36. b
37. c	38. d	39. a	40. d	41. d	42. a
43. b	44. a	45. d	46. c	47. c	48. c
49. a	50. a				