

Mathematics

1) A shopkeeper makes a profit of 20% even after giving a discount of 10% on the advertised price of a TV set. If he makes a profit of Rs.450, the advertised price (in Rs) is _____.

a) 2700.00

b) $2842 \frac{2}{19}$

c) 3000.00

d) 6750.00

2) If a person working p hours a day for each of the p days produce p units of works, then the units of work produced by q persons working q hours a day for each of q days is _____.

a) $\frac{q^2}{p^3}$

b) $\frac{q^3}{p^2}$

c) $\frac{p^2}{q^3}$

d) $\frac{p^3}{q^2}$

3) A rail engine is moving at a uniform speed of 30 km per hour towards a place A. When the engine is still at a distance 20 km from A, and insect starts at A and shuttles between engine and A at a speed of 42 km per hour. The total distance traveled by the insect, by the time the engine reaches A is in km _____.

a) 28

b) 30

c) 20

d) 48

4) 3 men and 7 women do a piece of work in 32 days. The number of days required to do a work by 7 men and 5 women twice as large is _____.

a) 19

b) 21

c) 27

d) 36

5) Joseph traveled a distance of 50 km on his first trip. On the later trip, traveling 3 times as fast he covered 300 km. Compared with his time for the first trip the time he took for the second trip was :

- a) Twice as much
- b) Thrice as much
- c) Same
- d) None of the above

6) Verma gets 10% more than Akbar, then Akbar gets _____.

- a) 10 % less than Verma
- b) 9 % less than Verma
- c) $9\frac{1}{11}$ % less than Verma
- d) 10% more than Verma

7) An agent makes a profit of 20% even after giving a discount of 10% on the advertised price. If he makes profit of Rs. 750 on the sale of scooter, the advertised price is _____.

- a) Rs. 4500
- b) Rs. 4750
- c) Rs. 5000
- d) Rs. 5250

8) 2000 people lived in a village in year 1975. In year 1981 the male population has increased by 10% and the female population has decreased by 6% but the total population has remained unchanged. Then the number of males in the year 1975 was _____.

- a) 675
- b) 725
- c) 750
- d) 775

9) A child was born on Friday 1st October in a certain year. His age on Wednesday 1st October 1980 was _____.

- a) 4 years
- b) 5 years
- c) 6 years
- d) 7 years

10) An electric pump can fill a tank in 3 hours. Because of the leak in the tank it was taking $3\frac{1}{2}$ hrs to fill the tank. Then the leak can drain all the water off the tank in _____.

- a) 12 hours
- b) $10\frac{1}{2}$ hours
- c) $6\frac{1}{2}$ hours
- d) 21 hours

11) The circumference of the front wheels of a locomotive is 3.5 meters and that of the back wheel is 3.0 meters. If the locomotive is moving at a speed of 15 m/sec . The shortest time in which both wheels will make whole number of turns is, in sec _____.

- a) 1.4
- b) 2.1
- c) 4.0
- d) 6.4

12) A man sold a chair and a table for Rs.760, thereby making a profit of 25% on the chair and 10% on the table. By selling them at Rs.767.50, he would have gained a profit of 10% on chair and 25% on table. Then what was the cost of chair and the table respectively?

- a) Rs.300 and Rs.350
- b) Rs.325 and Rs.375
- c) Rs.360 and Rs.340
- d) Rs.325 and Rs.350

13) A shop keeper purchases 11 knives for Rs.10 and sells them at rate of 10 knives for Rs.11.He earns a profit of _____.

- a) 11 %
- b) 15 %
- c) 20 %
- d) 21 %

14) A rectangular garden has an area of 2000m^2 and its length and breadth are in the ratio 5: 4. A road of uniform width runs inside the garden along the perimeter and has an area 344m^2 . The width of the road is then _____.

- a) 3.0 m
- b) 3.5 m
- c) 4.0 m
- d) 2.0 m

15) A trader purchases 70 kg of tea at Rs.15.00 per kg and 30 kg of tea at Rs.18.50 per kg. He then mixes the two. If the packing charges are 2 % and he would like to make a profit of 15 %, he should sell the tea at (answer should be correct up to the first decimal place) _____.

- a) Rs. 17.70 / kg
- b) Rs. 18.20 / kg
- c) Rs. 18.80 / kg
- d) Rs. 19.50 / kg

16) The area of a right angled triangle is 20 cm^2 and one of the sides containing the right angle is 4 cm. The altitude on the hypotenuse is _____.

- a) $20/\sqrt{29}$ cm
- b) 8 cm
- c) 10 cm
- d) $\sqrt{40/41}$ cm

17) The mean of the set of 20 measurements were calculated to be 56 cm. But later it was found that the mistake was made in one of the measurements which was recorded as 64 cm but should have been 61 cm. The correct mean then will be _____.

- a) 53 cm
- b) 54.5 cm
- c) 55.85 cm
- d) 56.15 cm

18) A person born on Monday July 1921 and retires in year 1981 on the day he attains the age 60. Then he retires on _____.

- a) Monday
- b) Wednesday
- c) Friday
- d) Saturday

19) The value of $\frac{(0.6)^0 - (0.1)^2}{\left(\frac{3}{2^3}\right)^{-1} \left(\frac{3}{2}\right)^3 + \left(-\frac{1}{3}\right)^{-1}}$ is _____.

- a) $\frac{3}{2}$
- b) $-\frac{3}{2}$
- c) $\frac{2}{3}$
- d) $-\frac{1}{2}$

20) A man borrows Rs.200 at 5 % compound interest. At the end of each year he pays back Rs.50. Then at the end of 4 years he owes Rs_____.

- a) 27.59
- b) 28.10
- c) 27.81
- d) 28.14

21) A business man sold two cars at Rs.9900 making 10 % profit on one car while 10 % loss on the other. His net loss or gain in percent on the two cars is then_____.

- a) No gain, no loss
- b) Loss of 1 %
- c) Gain of 1 %
- d) Gain of 5 %

22) The value of $(625)^{0.16} \times (625)^{0.09}$ is_____.

- a) 4
- b) 5
- c) 25
- d) 625

23) $[(2)^{-3}]^2 = ?$

- a) 64
- b) -64
- c) $\frac{1}{64}$
- d) $\frac{1}{12}$

24) $2.5 \times 2.5 - 2 \times 7.5 \times 2.5 + (7.5)^2 = ?$

- a) 25
- b) -25
- c) 100
- d) None of the above

25) $405 \times 395 = ?$

- a) 159975
- b) 160025
- c) 15075
- d) 150025

26) Which one of the following is a complete square?

- a) 0.225
- b) 2.25
- c) 22.5
- d) 0.00225

27) Which one of the following can be expressed as the product of two factors?

- a) $2x^2 + 3xy + y^2$
- b) $x^2 + 4xy + y^2$
- c) $x^2 + 3xy + 2y^2$
- d) $2x^2 + 5xy + y^2$

28) $(x + y)^3 - (x - y)^3$ can be factorized as _____.

- a) $2y(3x^2 + y^2)$
- b) $2x(3x^2 + y^2)$
- c) $2y(3y^2 + x^2)$
- d) $2x(x^2 + 3y^2)$

29) If $2^{2x-y} = 16$ and $2^{x+y} = 32$, the value of xy is _____.

- a) 2
- b) 4
- c) 6
- d) 8

30) $A \cap B = \emptyset$ is true if _____.

- a) A and B are disjoint
- b) $A \subset B$
- c) $B \subset A$
- d) $A = B$

31) $A \cup B = \emptyset$ is true if _____.

- a) $A = \emptyset$
- b) $B = \emptyset$
- c) A and B are disjoint
- d) $A = \emptyset = B$

32) $A \cup B = A \cap B$ if _____.

- a) $A = \emptyset$
- b) $B = \emptyset$
- c) $A = B$
- d) $A \subset B$

33) If A and B are disjoint sets, $n(A \cup B)$ is _____.

- a) $n(A) + n(B)$
- b) $n(A) \cdot n(B)$
- c) $\frac{n(A) + n(B)}{2}$
- d) $\sqrt{n(A)n(B)}$

34) In how many years will Rs. 1000 become Rs.1331 at the rate 10 % compounded annually?

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

35) A certain amount of money ' r % ' compounded annually after two and three years , becomes Rs. 1440 and Rs. 1728 respectively. Then the rate 'r' is :

- a) 5
- b) 10
- c) 15
- d) 20

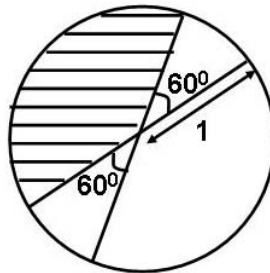
36) The area of a rectangular field is 150 sq units, its perimeter is 50 units, then its dimensions are:

- a) 2, 75
- b) 3, 50
- c) 5, 30
- d) 10, 15

37) The difference between the circumference and the radius of the circle is 37 cm. Then its diameter is _____.

- a) 14 cm
- b) 28 cm
- c) 42 cm
- d) 56 cm

38)



The area of the shaded region in the above figure is:

- a) $\pi / 2$ sq units
- b) $\pi / 3$ sq units
- c) $\pi / 4$ sq units
- d) π^2 sq units

39) Find the product of: $(x^{1/4} + y^{1/4})(x^{1/4} - y^{1/4})(x^{1/2} + y^{1/2})(x^2 + xy + y^2)$

a) $x^3 - y^3$

b) $x^3 + y^3$

c) $x^2 - y^2$

d) None of the above

40) Sum of three consecutive odd numbers is 351 then one of the numbers is _____.

a) 117

b) 121

c) 123

d) 125

41) Sum of the digits of a two digit number is 8. If 10 is added to the twice of that number the digits of the number are reversed. Then the number is _____.

a) 62

b) 53

c) 35

d) 26

42) The radius of sphere whose surface area is equal to its volume is _____ units.

a) 1

b) 2

c) 3

d) 4

43) $4lmn\left(\frac{1}{8lm} - \frac{3}{4mn} + \frac{5}{2nl}\right) - 20m + 6l = \underline{\hspace{2cm}}$

a) $\frac{1}{2}n$

b) $3l + \frac{1}{2}n$

c) $3l + \frac{1}{2}n - 10m$

d) $-3l + \frac{1}{2}n + 10m$

44) (49 % of X) = 392 then X =?

a) 800

b) 600

c) 1000

d) None of the above

45) The least number that must be added to 4931 to make it a perfect square is :

- a) 120
- b) 100
- c) 110
- d) 140

46) The points of intersection of a parabola $x^2 = 4y$ and straight line $x = 4$ are _____.

- a) (2, 3) (4, 4)
- b) (3, 4) (4, 4)
- c) (4, 5) (4, 4)
- d) (4, 4) (-4, 4)

47) If $2^x = 4^y = 8^z$ and $\frac{1}{2x} + \frac{1}{4y} + \frac{1}{4z} = 4$, then that value of x is

- a) $\frac{7}{16}$
- b) $\frac{7}{32}$
- c) $\frac{7}{48}$
- d) None of the above

48) The internal bisectors of $\angle B$ and $\angle C$ of a $\triangle ABC$ meet at O. If $\angle A = 80^\circ$, then the value of $\angle BOC$ is _____.

- a) 50°
- b) 100°
- c) 130°
- d) 160°

49) $AB \parallel CD$ and $AC \parallel BD$. CD is produced to E. If $\angle CAD = 37^\circ$ and $\angle BDE = 68^\circ$ then $\angle ABD$ is _____.

- a) 112°
- b) 110°
- c) 68°
- d) 75°

50) The equation $x + \sqrt{x-2} = 4$ has

- a) Two equal roots
- b) Two real roots
- c) One real root
- d) No real roots

51) Find the square root of 0.00010201

- a) 0.0101
- b) 0.1201
- c) 0.1579
- d) 0.0791

52) Divide Rs. 80 in the ratio 3:6:7

- a) Rs. 20, Rs. 30, Rs. 30
- b) Rs. 15, Rs. 30, Rs. 35
- c) Rs. 10, Rs. 35, Rs. 35
- d) None of the above

53) At what percent rate will Rs. 5000 amount to Rs. 6100 in 4 years at SI (simple interest)

- a) $5\frac{1}{2}\%$
- b) 7 %
- c) 6 %
- d) $4\frac{1}{2}\%$

54) Two triangles are similar if _____.

- a) Two sides are proportional
- b) Two sides are congruent
- c) Two pairs of angle are congruent
- d) Two pairs of angle are proportional

55) There are some students in the class. Average weight of $\frac{2}{5}$ th of students is 40 kg. Average weight of remaining students is 30 kg. Find the mean weight of the class.

- a) 36
- b) 35
- c) 34
- d) 33

56) $x + \frac{1}{x} = 2$, then $x^3 + \frac{1}{x^3} = ?$

- a) 8
- b) 6
- c) 4
- d) 2

57) Solution set of $x(x - 1) = x$ is _____.

- a) {1}
- b) {2, 0}
- c) {1, 0}
- d) {2}

58) $\angle PQR$ is an image of $\angle ABC$ in line L . Then which of the following is true statement?

- a) A, Q, C, P are coplanar
- b) B, R, A are non - coplanar
- c) C, P, Q are non - coplanar
- d) A, B, P are non - coplanar

59) The ratio of 5 times a number and a number obtained by subtracting 4 from 3 times the original number is 3 : 1. Find the original number.

- a) 3
- b) -3
- c) $\frac{6}{7}$
- d) $-\frac{6}{7}$

60) One of the angles of a triangle is equal to the sum of the other two angles. If the ratio of other two angles is 4 : 5 , then angles of triangle are _____.

- a) $50^\circ, 30^\circ, 80^\circ$
- b) $40^\circ, 50^\circ, 90^\circ$
- c) $20^\circ, 25^\circ, 135^\circ$
- d) $48^\circ, 60^\circ, 32^\circ$

61) The base of an Isosceles triangle is 16 cm and its perimeter is 36 cm. Then the area of the triangle is _____.

- a) 48 cm^2
- b) 52 cm^2
- c) 288 cm^2
- d) 24 cm^2

62) A student has to find $(\frac{5}{16})^{\text{th}}$ of a number but he has taken $(\frac{5}{6})^{\text{th}}$ of that number.

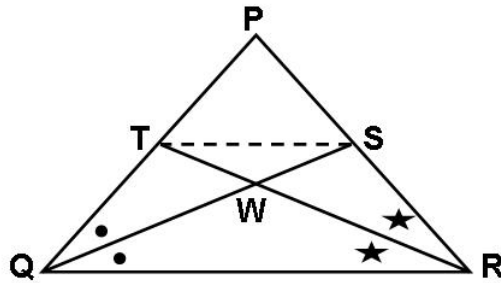
His answer was increased by 125. What is the original number?

- a) 240
- b) 80
- c) 160
- d) 320

63) A student divided a number by two when he was required to multiply it by 2.the answer he got was 2 .the correct answer should have been

- a) 12
- b) 8
- c) 6
- d) 4

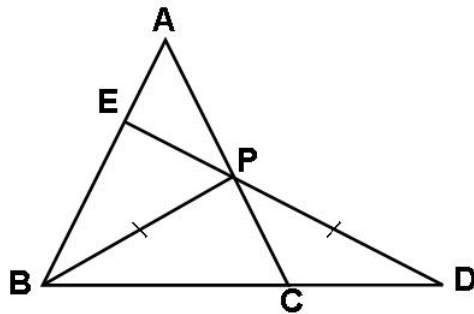
64)



In the above figure, QS and RT are bisectors of angles Q and R. They intersect each other at W. $l(PQ) = l(PR)$, $l(QR) = 6$ cm and $l(QT) = 4$ cm Then $l(TS) = ?$

- a) 3 cm
- b) 3.5 cm
- c) 2 cm
- d) 4 cm

65)



In $\triangle ABC$, $AB = AC$, P is a point on AC such that $PB = PD$. Then _____ triangles are similar.

- a) $\triangle ABC \sim \triangle DBE$
- b) $\triangle AEP \sim \triangle DCP$
- c) $\triangle DBE \sim \triangle BCP$
- d) $\triangle DBE \sim \triangle CPB$

66) $\sqrt[3]{2744} = 14$ then $\sqrt[3]{0.002744} = ?$

- a) 0.144
- b) 1.4
- c) 140
- d) 0.14

67) A colour T.V. costs Rs. 20000, it depreciates every year by 5 %. Then what will be its value after 2 years?

- a) Rs. 1800
- b) Rs. 18050
- c) Rs. 17000
- d) Rs. 17075

68) Circle is inscribed in Rhombus. A (Rhombus) = 30 cm^2 , length of each side is 6 cm. Then radius of circle is _____.

- a) 2.5 cm
- b) 5 cm
- c) 10 cm
- d) Any other answer is possible

69) $(3.2)^3 + (1.8)^3 + 15 \times 3.2 \times 1.8 = ?$

- a) 100
- b) 125
- c) 150
- d) 200

70) $\frac{x}{3} + \frac{y}{2} = 5, \frac{x}{3} + \frac{y}{4} = \frac{7}{2}$ Then $x + y = ?$

- a) $8 \frac{1}{2}$
- b) 12
- c) 6
- d) 13

71) When a whole number is subtracted from its cube, the result is 1320. Then the number is _____.

- a) 10
- b) 11
- c) 12
- d) 15

72) If a polynomial is divided by $(x + 1)(x + 2)$, the quotient is x and remainder is $(x + 1)$. If the same polynomial is divided by $(x + 1)$ then the quotient is _____ and remainder is _____.

- a) $(x + 1)^2, 0$
- b) $(x + 1)(x + 2)$
- c) $x(x + 1)(x + 2)$
- d) $(x + 1)^3, 0$

73) Roots of the equation $2(2x^2 + 7x + 5) = 1$ are

- a) $\frac{5}{2}, -1$
- b) $-\frac{5}{2}, 1$
- c) $-\frac{5}{2}, -1$
- d) $\frac{5}{2}, 1$

74) The sum of two numbers is 100 and their difference is 50. Then their ratio is _____.

- a) 2: 1
- b) 3: 1
- c) 5: 1
- d) 4: 1

75) A rectangle has length and breadth $(x + 7)$ and $(x + 2)$. A square has its side $(x + 4)$. Find the difference between the areas of rectangle and square.

- a) $x + 30$
- b) $x + 5$
- c) $x + 2$
- d) $x - 2$

76) Given that the ratio $(x + 2) : (3x + 4)$ is equal to the ratio 3: 5. Then find x.

- a) $\frac{1}{2}$
- b) 2
- c) -2
- d) $-\frac{1}{2}$

77) If $\triangle PML \cong \triangle KMS$ then $\angle SKM \leftrightarrow$ _____.

- a) $\angle PML$
- b) $\angle LPM$
- c) $\angle PLM$
- d) $\angle MLP$

78) If the roots of quadratic equation are 1 and 7, the equation is _____.

- a) $x^2 + 8x + 7 = 0$
- b) $x^2 - 8x - 7 = 0$
- c) $x^2 - 8x + 7 = 0$
- d) $x^2 + 8x - 7 = 0$

79) If the diagonals of a quadrilateral are congruent then the quadrilateral is _____.

- a) Parallelogram
- b) Rhombus
- c) Rectangle
- d) Trapezium

80) If $\sqrt{1 + \frac{27}{169}} = 1 + \frac{x}{13}$, then x = ?

- a) 1
- b) 14
- c) Cannot be determined
- d) None of the above

81) The square number ends in 6, the preceding figure is _____.

- a) An even number
- b) An odd number
- c) A prime number
- d) A composite number

82) The square root of $71 \times 72 \times 73 \times 74 + 1$ is _____.

- a) 9375
- b) 9625
- c) 5625
- d) 5255

83) The value of $\sqrt{-1} \times \sqrt{-1} = ?$

- a) - 1
- b) + 1
- c) ± 1
- d) None of the above

84) The value of $(501)^2 - (500)^2$ is _____.

- a) 1
- b) 101
- c) 1001
- d) None of the above

85) Which of the following is a Pythagorean triplet?

- a) (6, 8, 10)
- b) (3, 4, 7)
- c) (5, 12, 18)
- d) None of the above

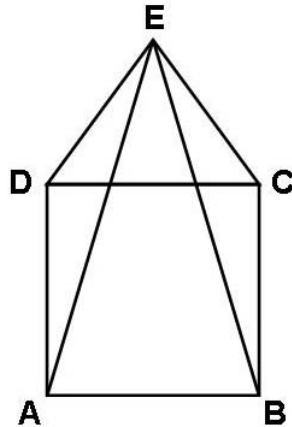
86) The value of $1 + 3 + 5 + 7 + 9 + \dots + 25$ is _____.

- a) 196
- b) 625
- c) 225
- d) 169

87) The perimeter of a rectangle is 20 cm and sum of two squares described on the adjacent sides exceeds twice the area of rectangle by 4 cm^2 . Find the longer side of the rectangle.

- a) 6 cm
- b) 4 cm
- c) 8 cm
- d) 7 cm

88)



ABCD is a square and DCE is an equilateral triangle, then find $m \angle DAE$

- a) 60°
- b) 30°
- c) 20°
- d) 15°

89) The smallest number by which 396 must be multiplied so that the product becomes a perfect square is _____.

- a) 5
- b) 11
- c) 3
- d) 2

90) The value of $\sqrt{99} \times \sqrt{396}$ is _____.

- a) 208
- b) 198
- c) 254
- d) None of the above

91) The diagonal of a square A is $(x + y)$. The diagonal of square B with twice the area of A is _____.

- a) $\sqrt{2} (x + y)$

- b) $2(x + y)$
- c) $2x + 4y$
- d) $4x + 2y$

92) A square ABCD is inscribed in a circle of radius a . Another circle is inscribed in ABCD and a square EFGH is inscribed in this circle. The side EF is equal to _____.

- a) a
- b) $a\sqrt{2}$
- c) $\frac{a}{\sqrt{2}}$
- d) $\frac{a}{2}$

93) A wire in the shape of an equilateral triangle encloses an area S square centimeter. If the same wire is bent to form a circle, the area of the circle will be _____.

- a) $\pi S^2/9$
- b) $3S^2/\pi$
- c) $3S/\pi$
- d) $3\sqrt{3}S/\pi$

94) The whole surface of a cube is 216 cm^2 . The volumes of this will be _____.

- a) 108 cm^3
- b) 54 cm^3
- c) 432 cm^3
- d) 216 cm^3

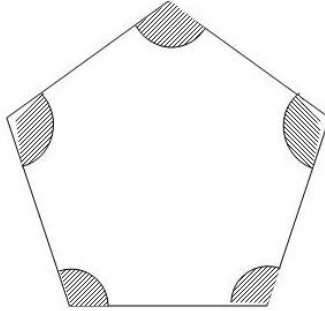
95) If the curved surface of a cylinder be double the area of the ends then the ratio of its height and radius is _____.

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

96) The outer length, breadth and height of a wooden box open at the top are 10 cm, 8 cm and 5 cm respectively. If the thickness of the wood is 1 cm, the total surface area of the box is _____.

- a) 420 cm^2
- b) 452 cm^2
- c) 451 cm^2
- d) 483 cm^2

97) ABCDE is any pentagon. In the given figure all the circles have their centre at the vertices and are all of equal radius 'r'. The area of all the shaded sector is _____.



- a) πr^2
- b) $2\pi r^2$
- c) $5\pi r^2/4$
- d) $3\pi r^2/2$

98) If the radius of the base of a cylinder is 2 cm and its height 7 cm, then its curved surface is _____.

- a) 44 cm^2
- b) 22 cm^2
- c) 88 cm^2
- d) 56 cm^2

99) The sides of a triangle are 3cm, 4 cm, 5 cm. Its area is _____.

- a) 12 cm^2
- b) 15 cm^2
- c) 20 cm^2
- d) 6 cm^2

100) A rectangular sheet of metal $x \text{ cm} \times y \text{ cm}$ a square of side $Z \text{ cm}$ cut from each corner. The sheet is then bent to form a tray of depth $Z \text{ cm}$. The volume of the tray is _____.

- a) $z(x-z)(y-z) \text{ cm}^3$
- b) $xyz \text{ cm}^3$
- c) $z(x-2z)(y-2z) \text{ cm}^3$
- d) $(x+y)z \text{ cm}^3$

101) A rectangular garden has an area 2000 square meter and its length and breadth are in the ratio 5:4. A road of uniform width runs inside the garden around

the perimeter and has an area 344 square metre. The width of the road is _____.

- a) 3 m
- b) 3.5 m
- c) 4 m
- d) 2 m

102) If $a = 3^{1/5} = 4^{x/2}$ then $a^{5 + \frac{1}{x}} = ?$

- a) 12
- b) 5
- c) 6
- d) 7

103) $(\frac{3}{5})^k \times 25 = (\frac{5}{3})^{-4} \times 9 \therefore k = \underline{\hspace{2cm}}$.

- a) -4
- b) 4
- c) 6
- d) -6

104) $(\frac{7}{5})^5 (\frac{7}{5})^k = 1 \therefore k = \underline{\hspace{2cm}}$.

- a) $\frac{1}{5}$
- b) -5
- c) -4
- d) 0

105) $\frac{y^{-3}}{y^m} = y^{-1}$ then $m = \underline{\hspace{2cm}}$.

- a) -2
- b) 0
- c) -1
- d) $\frac{1}{3}$

106) $8^{\frac{1}{3}}$ is ___ times that of $\frac{1}{8^3}$

- a) 256

b) $\frac{1}{256}$

c) 1024

d) $\frac{1}{1024}$

107) $4^{2k} \times 2^{-3} = 8^3 \therefore k =$

a) -3

b) 2

c) 3

d) 4

108) $5 + 5 + 5 \dots (5x) = 5^7$ then $x =$ _____.

a) 5^6

b) 5^7

c) 5^5

d) 125

109) $a = b^{1/3} = c^{1/4} \therefore bc$ in terms of $a =$ _____.

a) a^{12}

b) a^7

c) $a^{7/12}$

d) None of these

110) $\frac{3^{-1} \cdot 2^{-1}}{3^{-1} + 2^{-1}} = ?$

a) 5

b) $\frac{1}{5}$

c) $\frac{5}{6}$

d) $\frac{6}{5}$

111) $2^{-3} - 3^{-2} = ?$

a) 3^{-3}

b) 72^{-1}

- c) $-\frac{1}{72}$
d) 81^{-1}

112) $2^{-1} \cdot 5^{-1} \cdot x = 10^{-1} \therefore x = \underline{\hspace{2cm}}$.

- a) 5^{-3}
b) 5^{-2}
c) 5^{-1}
d) 5^0

113) which one of the following is greatest?

- a) 3^{14^2}
b) 22^{2^3}
c) 3^{22^2}
d) 2^{10^2}

114) $[(2^{-3})^{-2}]^{\frac{1}{3}} = ?$

- a) 4
b) $2^{-\frac{5}{3}}$
c) $\frac{1}{4}$
d) $2^{\frac{5}{3}}$

115) $\frac{(0.5)^{13}}{(0.5)^{10}} = ?$

- a) $\frac{1}{8}$
b) 1.25
c) 12.5
d) $\frac{1}{16}$

116) $(ab)^m = ?$

- a) $2a^m \left(\frac{b}{2}\right)^m$
b) $a^m m\sqrt{b}$

- c) $a^m (b^{-1})^{-m}$
 d) $a^m (-b^{-1})^m$

117) $\frac{1}{1+a^{-m}b^n+c^p a^{-m}} + \frac{1}{1+a^m b^{-n}+c^p b^{-n}} + \frac{1}{1+a^m c^{-p}+c^n c^{-p}} = ?$

a) $a^m + b^n + c^p$

b) $\frac{1}{a^m + b^n + c^p}$

c) 1

d) $\frac{1}{a^{-m} + b^{-n} + c^{-p}}$

118) $x^{x\sqrt{x}} = (x\sqrt{x})^x$ then truth set is _____.

a) $\{-9\}$

b) $\{-4\}$

c) $\{\frac{9}{4}\}$

d) $\{-\frac{9}{4}\}$

119) Find a four digit number of the form a abb which is a perfect square.

a) 7,799

b) 7,766

c) 7,755

d) 7,744

120) A four digit perfect square whose first two digits and last two digits each represent square is _____.

a) 1636

b) 1681

c) 3664

d) 4964

121) The value of $\frac{0.1 \times 0.1 \times 0.1 + 0.2 \times 0.2 \times 0.2 + 0.3 \times 0.3 \times 0.3 - 0.3 \times 0.2 \times 0.3}{0.1 \times 0.1 + 0.2 \times 0.2 + 0.3 \times 0.3 - 0.1 \times 0.2 - 0.2 \times 0.3 - 0.3 \times 0.1}$ is

a) $0.1 \times 0.2 \times 0.3$

b) $0.1 + 0.2 + 0.3$

c) $0.1 + 0.2 - 0.3$

d) $0.1 - 0.2 + 0.3$

122) In order to compute 0.15% of a number the number must be multiplied by _____.

- a) 0.0015
- b) 0.015
- c) 0.15
- d) 1.5

123) $\left(\frac{a^m + a^{-m}}{2}\right)^2 - \left(\frac{a^m - a^{-m}}{2}\right)^2$

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

124) $\frac{(81)^{1.25} \times 9^{1.50}}{9^2 \times (3^2)^0} = ?$

- a) 3
- b) 9
- c) 81
- d) 27

125) $3^{4x-2} = 729$ then $x^2 =$

- a) 9
- b) 4
- c) 1
- d) 8