ARTHI EDUCATIONAL CENTER

unit 7,8 creative one mark

10th Standard   Date : 27-Mar-24

Reg.No. : ☐ ☐ ☐ ☐ ☐ ☐

Maths

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Time : 00:45:00 Hrs

Total Marks : 114

I. ANSWER ALL QUESTION   114 x 1 = 114

1) The radio of base of a one 5 cm and to height 12 cm. The slant height of the cone _____

   (a) 12 cm   (b) 17 cm   (c) 7 cm   (d) 60 cm

2) If S_1 denotes the total surface area at a sphere of radius ૪ and S_2 denotes the total surface area of a cylinder of base radius ૪ and height 2r, then _____

   (a) $S_1 = S_2$ (b) $S_1 > S_2$ (c) $S_1 < S_2$ (d) $S_1 = 2S_2$

3) A cylinder 10 cone and have there are of a equal base and have the same height. what is the ratio of there volumes?

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

4) How many balls, each of radius 1 cm, can be made from a solid sphere of lead of radius cm?

   (a) 64   (b) 216   (c) 512   (d) 16

5) The volume of a frustum if a cone of height L and ends-radio and r_1 and r_2 is _____

   (a) $\frac{1}{3}\pi h 1(r_1{}^2 + r_2{}^2 + r_1 r_2)$ (b) $\frac{1}{3}\pi h(r_1{}^2 + r_2{}^2 - r_1 r_2)$ (c) $\pi h(r_1{}^2 + r_2{}^2 + r_1 r_2)$ (d) $\pi h(r_1{}^2 + r_2{}^2 - r_1 r_2)$

6) The height of a right circular cone whose radius is 3 cm and slant height is 5 cm will be _____

   (a) 12 cm   **(b) 4 cm**   (c) 13 cm   (d) 5 cm

7) It S_1 denotes the total surface area of a sphere of radius r and S_2 denotes the total surface area of a cylinder of base radius r and height 2r, then _____

   (a) $S_1 = S_2$ (b) $S_1 > S_2$ **(c) $S_1 < S_2$**   (d) $S_1 = 2S_2$

8) The ratio of the volumes of two spheres is 8 : 27. If r and R are the radii of sphere respectively, Then (R - r) : r is _____

   (a) 1:2   (b) 1:3   (c) 2:3   (d) 4:9

9) The radius of a wire is decreased to one-third of the original. If volume the same, then the length will be increased _____of the original.

   (a) 3 times   (b) 6 times   **(c) 9 times**   (d) 27 times

10) The height of a cone is 60 cm. A small cone is cut off at the top by plane parallel to the base and its volume is $\left[\frac{1}{64}\right]^{th}$ the volume of the original cone. Then the height of the smaller cone is _____

   (a) 45 cm   (b) 30 cm   **(c) 15 cm**   (d) 20 cm

11) A solid frustum is of height 8 cm. If the radii of its lower and upper ends are 3 cm and 9 cm respectively, then its slant height is _____

   (a) 15 cm   (b) 12 cm   **(c) 10 cm**   (d) 17 cm

12) A solid is hemispherical at the bottom and conical above. If the curved surface areas of the two parts are equal, then the ratio of its radius and the height of its conical part is _____

   (a) 1:3   **(b) $1 : \sqrt{3}$**   (c) 1:1   (d) $\sqrt{3} : 1$

13) The material of a cone is converted into the shape of a cylinder of equal radius. If the height of the cylinder is 5 cm, then height of the cone is _____

(a) 10 cm   **(b) 15 cm**   (c) 18 cm   (d) 24 cm

14) The curved surface area of a cylinder is 264 cm^2 and its volume is 924 cm^2. The ratio of diameter to its height is _____

(a) 3:7   **(b) 7:3**   (c) 6:7   (d) 7:6

15) When Karuna divided surface area of a sphere by the sphere's volume, he got the answer as $\frac{1}{3}$. What is the radius of the sphere?

(a) 24 cm   **(b) 9cm**   (c) 54cm   (d) 4.5cm

16) A spherical steel ball is melted to make 8 new identical balls. Then the radius each new ball is how much times the radius of the original ball?

(a) $\frac{1}{3}$ (b) $\frac{1}{4}$ **(c) $\frac{1}{2}$**   (d) $\frac{1}{8}$

17) A semicircular thin sheet of a metal of diameter 28 cm is bentt and an open conical cup is mader. What is the capacity of the cup?

(a) $\left[\frac{1000}{3}\right]\sqrt{3}cm^3$ (b) $300\sqrt{3}cm^3$ (c) $\left[\frac{700}{3}\right]\sqrt{3}cm^2$ **(d) $\left[\frac{1078}{3}\right]\sqrt{3}cm^3$**

18) A cone of height 9 cm with diameter of its base 18 cm is carved out from a wooden solid sphere of radius 9 cm. The percentage of wood wasted is

(a) 45%   (b) 56%   (c) 67%   **(d) 75%**

19) A cylinder having radius 1 m and height 5 m is completely filled with milk. In how many conical flasks can this milk be filled if the radius and height is 50 cm each?

(a) 50   (b) 500   **(c) 120**   (d) 160

20) A floating boat having a length 3m and breadth 2m is floating on a lake. The boat sinks by 1 cm when a man gets into it. The mass of the man is (density of water is 10000 kg/m^3)

(a) 50 kg   **(b) 60 kg**   (c) 70 kg   (d) 80 kg

21) Kamalam went to play a lucky draw contest 135 tickets of the lucky draw were sold. If the probability of Kamalam winning is $\frac{1}{9}$, then the number of tickets bought by kamalam is _____

(a) 5   (b) 10   **(c) 15**   (d) 20

22) If a letter is chosen at random from the English alphabets {a, b....,z}, then the probability that the letter chosen precedes x _____

(a) $\frac{12}{13}$ (b) $\frac{1}{13}$ **(c) $\frac{23}{26}$**   (d) $\frac{3}{26}$

23) A purse contains 10 notes of Rs. 2000, 15 notes of Rs. 500, and 25 notes of Rs. 200.One note is drawn at random. What is the probability that the note is either a Rs. 500, note or Rs. 200 note?

(a) $\frac{1}{5}$ (b) $\frac{3}{10}$ (c) $\frac{2}{3}$ **(d) $\frac{4}{5}$**

24) The lateral surface area of a cylinder is developed into a square whose diagonal is $2\sqrt{2}$ cm. The area of the base of the cylinder (in cm^2) is _____

(a) 3π **(b) $\frac{1}{\pi}$**   (c) π (d) 6π

25) How many metres of cloth 2.5 m wide will be required to make a conical tent whose radius is 7 m and height is 24 m?

(a) 210 m   **(b) 220 m**   (c) 230 m   (d) 240 m

26) The total surface area of a hemisphere of radius 10cm is _____

(a) 942.86 cm^2   (b) 900 cm^2 (c) 300 cm^2 (d) 592.86 cm2

27) The curved surface area of a right circular cone of radius 11.3 cm is 355 cm^2. What is its slant height?

(a) 8 cm   (b) 9 cm   **(c) 10 cm**   (d) 11 cm

28) The curved surface area of a right circular cone of height 15 cm and base diameter 16 cm is _____

(a) 146 π (b) 116 π (c) 126 π **(d) 136 π**

29) The ratio of total surface area to the lateral surface area of a cylinder with base radius 80 cm and height 20 cm is _____

(a) 1 : 5   (b) 2 : 3   **(c) 5 : 1**   (d) 3 : 2

30) The surface arae of a sphere of diameter 'r' is _____

(a) $2\pi r^2$ **(b) πr^2**   (c) $\frac{\pi r^2}{2}$ (d) $\frac{\pi r^2}{4}$

31) The total surface area of a cone whose radius is $\frac{r}{2}$ and slant height 2l is _____ (sq.units)

(a) $2\pi r(l+r)$ **(b)** $\pi r\left(l+\frac{r}{4}\right)$ (c) $\pi r(l+r)$ (d) $2\pi rl$

32) The slant height of the frustum of a cone is 4 cm and the circumference of its circular ends are 18 cm and 6 cm, then the curved surface area of the frustum is _____ (cm^2)

(a) 12   (b) 24   **(c) 48**   (d) 54

33) If two solid hemispheres of same base radius 'r' are joined together along their bases, then the curved surface area of this new solid is _____ (sq.units)

(a) $4\pi r^2$ (b) $6\pi r^2$ (c) $3\pi r^2$ (d) $8\pi r^2$

34) C.S.A of solid sphere is equal is _____

(a) T.S.A of solid sphere   (b) T.S.A of hemisphere   (c) C.S.A of hemisphere   (d) none of these

35) x and y are two cylinders of the same height. The base of x has diameter that is halt the diameter of the base of y. If the height of x is doubled,the volume of x becomes _____

(a) equal to the volume of y   (b) double the volume of y   **(c) half the volume of y**   (d) greater than the volurne of y

36) The Area of the base of a right circular cone is 78.5 cm^2 and its height is 12cm Find the volume

(a) 341 cm^3 **(b) 314 cm^3**   (c) 301 cm^3 (d) 304 cm^3

37) The curved surface area of a cylindrical pillar is 264 m^2 and its volume is 924m^3, then its diameter is _____

(a) 12 m   (b) 13 m   **(c) 14 m**   (d) 15 m

38) The volume of the sphere in 38808 cm^3, then its surface area is _____

(a) 5544 cm^2   (b) 4455 cm^2 (c) 4545 cm^2 (d) 5454 cm^2

39) The volumes of two cylinders are as a : b and their heights are as c : d, then the ratio of their diameters is _____ (cubic units)

(a) $\frac{ad}{bc}$ (b) $\frac{ad^2}{bc^2}$ **(c)** $\sqrt{\frac{ad}{bc}}$ (d) $\sqrt{\frac{a}{b}}\times\frac{c}{d}$

40) A hemispherical container with radius 6 cm contains 325 ml of milk. Then the volume of milk that is needed to filI the container completely is _____

(a) 124.75 ml   **(b) 127.45 ml**   (c) 217.45 ml   (d) 117.45 ml

41) The external and internal diameters of a hemispherical bowl are 10 cm and 8 cm respectively, then the volume is _____ (cm^3)

(a) 121.87   (b) 121.78   (c) 128.71   **(d) 127.81**

42) If the volume and surface idea are numerically equal then its radius is _____

(a) 2 units   **(b) 3 units**   (c) 4 units   (d) 5 units

43) If the radius of cone is reduced to half, then the new volume would be _____

(a) $\frac{1}{3}\left(\frac{1}{3}\pi r^2 h\right)$ **(b)** $\frac{1}{3}\pi\left(\frac{r}{2}\right)^2 h$ (c) $\frac{1}{3}\pi\left(\frac{r}{9}\right)^2 h$ (d) $\frac{1}{3}\pi\left(\frac{r^2}{4}\right)\left(\frac{h}{2}\right)$

44) If the volume of sphere is 36π cm^3, then its radius is equal to _____

(a) 3 cm   (b) 2 cm   (c) 5 cm   (d) 10 cm

45) A right circular cylinder of radius 'r' cm and height 'h' cm (h > 2r) just encloses a sphere of diameter _____

(a) r cm   **(b) 2r cm**   (c) h cm   (d) 2h cm

46) Two cones with same base radius 8 cm and height 15 cm are joined together along their bases. Then the surface iuea of the shape so formed is _____

(a) 854 cm^2   (b) 860 cm^2 (c) 864 cm^2 (d) 870 cm^2

47) A cylinder circumscribes a sphere. The ratio of their volumes is _____

(a) 1 : 2   **(b) 3 : 2**   (c) 4 : 3   (d) 5 : 6

48) A sphere and a cube have the same surface area. The ratio of their volumes is _____

(a) $\sqrt{6}:\sqrt{\pi}$ (b) $\sqrt{3}:\sqrt{\pi}$ (c) $\pi:\sqrt{2}$ (d) None of these

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49) A sphere of radius R has volume equal to that of a cone of radius R, the height of the cone is _____

(a) R   (b) 2R   (c) 3R   **(d) 4R**

50) A cone is 8.4 cm high and radius of its base is 2.1 cm. It is melted and recast into sphere The radius of the sphere is _____

(a) 4.2 cm   **(b) 2.1 cm**   (c) 2.4 cm   (d) 1.6 cm

51) A spherical iron ball is dropped into a vessel of base diameter 14 cm, containing water. The water level is increased by $9\frac{1}{3}$ cm What is the radius of the ball?

(a) 3.5 cm   **(b) 7 cm**   (c) 9 cm   (d) 12 cm

52) Three solid spheres of gold whose radii are 1 cm, 6 cm and 8 cm respectively are melted into a single solid sphere. Then the radius of the sphere is _____

(a) 7 cm   (b) 8 cm   **(c) 9 cm**   (d) 10 cm

53) A copper sphere of diameter 18 cm is drawn into a wire of diameter 4 mm. Then the length of the wire is _____

(a) 143 m   **(b) 243 m**   (c) 343 m   (d) 443 m

54) A hemispherical bowl of internal radius 9 cm contains a liquid. This liquid is to be filled into cylindrical shaped small bottles of diameter 3 cm and height 4 cm. How many bottles will be needed to empty the bowl _____

(a) 24   (b) 34   (c) 44   **(d) 54**

55) If are event occurs surely, then its probability is _____

(a) 0   (b) 1   (c) $\frac{1}{2}$ (d) $\frac{3}{4}$

56) Two dice are through simultaneously the probability if getting a double is _____

(a) $\frac{5}{36}$ (b) $\frac{1}{12}$ (c) $\frac{1}{9}$ (d) $\frac{1}{6}$

57) A girl calculates the probability of her winning in a match is 0.08 what is the probability of her losing the game _____

(a) 91%   (b) 8%   (c) 92%   (d) 80%

58) A number x is chosen at random from -4, -3, -2, -1, 0, 1, 2, 3, 4 find the probability that |x| ≤ 4

(a) 0   (b) 1   (c) $\frac{1}{2}$ (d) $\frac{1}{9}$

59) which of the following is true?

(a) 0 ≤ p(∈) ≤ 1   (b) p(∈) > 1   (c) p(∈) < 0   (d) $-\frac{1}{2} \geq P(\in) \leq \frac{1}{2}$

60) IF the probability of the non-happening of a event is q, then the probability of happening of that event is

(a) 1-q   (b) q   (c) q/2   (d) ∝q

61) The mean of first first 10 odd natural number is _____

(a) 5   (b) 10   (c) 20   (d) 19

62) The standard deviation is the ____ of variance

(a) cube   (b) square   (c) square root   (d) cube root

63) The variance of 5 values is 16. If each value is doubled them the standard deviation of new values is_____

(a) 4   (b) 8   (c) 32   (d) 16

64) The mean of a observation x_1, x_2, x_3, ... x_n is $\bar{x}$. If each observation is multiplied by p, there the mean of the new observations is _____

(a) $\frac{\bar{x}}{p}$ (b) $p\bar{x}$ (c) $\bar{x}$ (d) $P+\bar{x}$

65) Sum of deviations of a variable from its mean is always_____

(a) 0   (b) 1   (c) 2   (d) 5

66) In statistics, distance or dispersion from central value is classified as

(a) stanard variance   (b) sample variance   (c) standard root   (d) standard deviation

67) If a digit is chosed at random from the digits 1, 2, 3, 4, 5, 6, 7, 8, 9 then the probobility that it is odd is _____

68) Which of the following is not the probability of accurance of an event?

(a) 0.2   (b) 0.4   (c) 0.8   (d) 1.6

69) The standard deviation of a data is 5. If each value is multiplied by 2, then the new variance is _____

(a) 3   **(b) 100**   (c) 10   (d) 225

70) The range of first 10 prime number is _____

(a) 9   (b) 20   **(c) 27**   (d) 5

71) If the smallest value and co-efficient of range a data are 25 and 0.5 respectively. Then the largest value is _____

(a) 25   **(b) 75**   (c) 100   (d) 12.5

72) If the observations 1, 2, 3, ... 50 have the variance V_1 and the observations 51, 52, 53, ... 100 have the variance V_2 then $\frac{V_1}{V_2}$ is _____

(a) 2   **(b) 1**   (c) 3   (d) 0

73) If the standard deviation of a variable x is 4 and if = $\frac{3x+5}{4}$, then the standard deviation of y is _____

(a) 4   (b) 3.5   **(c) 3**   (d) 2.5

74) If the data is multiplied by 4, then the corresponding variances is get multiplied by _____

(a) 4   **(b) 16**   (c) 2   (d) None

75) If the co-efficient of variation and standard deviation of a data are 35% and 7.7 respectively then the mean is _____

(a) 20   (b) 30   (c) 25   **(d) 22**

76) Th4e batsman A is more consistent than batsman B if _____

(a) C.V of A > C.V of B   **(b) C.V of A < C.V of B**   (c) C.V of a =C.V of B   (d) C.V of A≥C.V of B

77) If an event occurs surely, then its probabllity is _____

(a) 1   (b) 0   (c) $\frac{1}{2}$ (d) $\frac{3}{4}$

78) A letter is selected at randam from the the word 'PROBABILITY'. The probability that its is nota vowel is _____

(a) $\frac{4}{11}$ **(b) $\frac{7}{11}$**   (c) $\frac{3}{11}$ (d) $\frac{6}{11}$

79) In a competition containing two events A and B, the probability of winning the events A and B are $\frac{1}{3}$ and $\frac{1}{4}$ respectively and the probability if winning both events is _____

(a) $\frac{1}{12}$ **(b) $\frac{5}{12}$**   (c) $\frac{1}{12}$ (d) $\frac{7}{12}$

80) A nuber x is chosen at random drom -4, -3, -2, -1, 0, 1, 2, 3, 4. The probability that $|x| \leq 3$ is _____

(a) $\frac{3}{9}$ (b) $\frac{4}{9}$ (c) $\frac{1}{9}$ **(d) $\frac{7}{9}$**

81) If the probability of non-happening of an event is, then probability of happening of the event is _____

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

82) In one thousand lottery tickets, there are 50 prizes to be given. The probability of happenning of the event is _____

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

83) When three coins are tossed, the probability of getting the same face on all the three coins is _____

(a) $\frac{1}{8}$ **(b) $\frac{1}{4}$**   (c) $\frac{3}{8}$ (d) $\frac{1}{3}$

84) A box contains some milk chocalates and some coco chocolates and there are 60 choolates in the box. If the probability of taking a milk chocolate is $\frac{2}{3}$ then the number of coco chocolates is _____

(a) 40   (b) 50   **(c) 20**   (d) 30

85) Statistically, spread or scatterness of observations in a data is called_____

(a) Discriminant   **(b) Dispersion**   (c) Range   (d) Standard deviation

86) Mean of squared deviations of some observations from their arithmetic mean is called

87) Positive square root of mean of squared deviations of some observations from the arithmetic mean is called_____

   (a) Standard deviation   (b) Variation   (c) Median   (d) Mode

88) Sum of deviations of a variable from its mean is always _____

   (a) 0   (b) 1   (c) 2   (d) 5

89) Standard deviation of first 50 natural numbers is_____

   (a) 45.43   **(b) 14.43**   (c) 20.43   (d) 16.43

90) Standard deviation of population is denoted by_____

   (a) Ω (b) ω **(c) σ**   (d) Δ

91) Price of apple per kg for three days are as 98, 97,100 then the value of standard deviation with assumed mean method is _____

   (a) 15   (b) 10   **(c) 1**   (d) 11

92) In statistics, distance or dispersion from central value is classified as _____

   (a) Standard variance   (b) Sample variance   (c) Standard root   **(d) Standard deviation**

93) Range of the scores 80, 90, 90, 85, 60,70,75,85,90, 60, 80 is_____

   (a) 30   (b) 70   (c) 90   (d) 40

94) Coefficient of range of 5, 6,7,8, 9,54 is_____

   (a) $\frac{39}{49}$ **(b) $\frac{49}{59}$**   (c) $\frac{59}{69}$ (d) $\frac{69}{79}$

95) If the total sum of squares is 20 and sample variance is 5, then total number of observations are _____

   (a) 15   (b) 25   **(c) 4**   (d) 35

96) The average of first 'n' natural numbers is _____

   (a) $\frac{n(n+1)}{2n}$ (b) $\frac{n}{2}$ **(c) $\frac{n+1}{2}$**   (d) n

97) If mean is 25 and standard deviation is 5 then co-efficient of variation is _____

   (a) 100%   (b) 25 %   **(c) 20 %**   (d) None of these

98) _____is used to compare the variation or dispersion in two or more sets of data even though they are measured in different units.

   (a) Range   (b) Standard deviation   **(c) Co-efficient of variation**   (d) Mean deviation

99) _____is used to criterion of consistence is for consistence performance

   (a) Range   (b) Standard deviation   **(c) Co-efficient of variation**   (d) Mean deviation

100) If the co-efficient of variation of marks of Brinda is 25% and that of Buvana is 40% Who is more stable in scoring?

   (a) Brinda   (b) Buvana   (c) Both   (d) None

101) lf a digit is chosen at random from the digits 1, 2, 3, 4, 5, 6, 7, 8, 9 then the probability that it is odd is _____

   (a) $\frac{4}{9}$ (b) $\frac{5}{9}$ (c) $\frac{1}{9}$ (d) $\frac{2}{3}$

102) In a single throw of die, the probabitityof getting a muttiple of 3 is _____

   (a) $\frac{1}{2}$ **(b) $\frac{1}{3}$**   (c) $\frac{1}{6}$ (d) $\frac{2}{3}$

103) The probability throwing a number greater than 2 with a fair dice is _____

   (a) $\frac{3}{5}$ (b) $\frac{2}{5}$ **(c) $\frac{2}{3}$**   (d) $\frac{1}{3}$

104) A card is dropped from a pack of 52 playing cards. The probability that it is an ace is _____

   (a) $\frac{1}{4}$ **(b) $\frac{1}{13}$**   (c) $\frac{1}{52}$ (d) $\frac{12}{13}$

105) The probability of a certain event is _____

   (a) 0   **(b) 1**   (c) $\frac{1}{2}$ (d) Not exists

106) The probability of an impossible event is

(a) **0**   (b) 1   (c) $\frac{1}{2}$ (d) Not exists

107) Which of the following is not the probability of accurance of an event _____

 (a) 0.2   (b) 0.4   (c) 0.8   **(d)** **1.6**

108) Probability of getting 3 heads or 3 tails in tossing a coin 3 times is _____

 (a) $\frac{1}{8}$ **(b)** $\frac{1}{4}$ (c) $\frac{3}{8}$ (d) $\frac{1}{2}$

109) A fair die is thrown once. The probability of getting a prime (or) composite number is _____

 (a) **1**   (b) 0   (c) $\frac{5}{6}$ (d) $\frac{1}{6}$

110) If P (E) = 0.05, then P (not E) = _____

 (a) -0.05   (b) 0.5   (c) 0.9   **(d)** **0.95**

111) WItich of the following statement is wrong.

 (a) A∩B is an event that occurs only when both A and B occurs

 (b) A∪B is an event that occurs only when at least one of A or B occurs.   (c) $\vec{A}$ is an event that occurs only when A does not occur

 (d) $\vec{B}$ **is an event that occurs when B occur**

112) $A \cup \bar{A} =$_____

 (a) 0   (b) 1   (c) ϕ **(d) S**

113) $A \cap \bar{A} =$_____

 (a) 0   (b) 1   **(c)** ϕ (d) S

114) $P(\overline{A \cup B}) =$_____

 (a) $P(\bar{A} \cup \bar{B})$ **(b)** $P(\bar{A} \cap \bar{B})$ (c) $P(A \cup B)$ (d) $P(A \cap B)$