RAVI MATHS TUITION CENTER, CHENNAI – 82. PH - 8056206308

Statistics and Probability FULL TEST

10th Standard

Maths

Reg.No. : | | | | | | |

Exam Time : 03:00:00 Hrs

Total Marks : 1

15 x 1 =

1) Which of the following is not a measure of dispersion?
(a) Range (b) Standard deviation (c) Arithmetic mean (d) Variance

2) The range of the data 8, 8, 8, 8, 8. . . 8 is
(a) 0 (b) 1 (c) 8 (d) 3

3) The sum of all deviations of the data from its mean is
(a) Always positive (b) always negative (c) zero (d) non-zero integer

4) The mean of 100 observations is 40 and their standard deviation is 3. The sum of squares of all deviatio is
(a) 40000 (b) 160900 (c) 160000 (d) 30000

5) Variance of first 20 natural numbers is
(a) 32.25 (b) 44.25 (c) 33.25 (d) 30

6) The standard deviation of a data is 3. If each value is multiplied by 5 then the new variance is
(a) 3 (b) 15 (c) 5 (d) 225

7) If the standard deviation of x, y, z is p then the standard deviation of 3x+5, 3y+5, 3z +5 is
(a) 3p+5 (b) 3p (c) p + 5 (d) 9p + 15

8) If the mean and coefficient of variation of a data are 4 and 87.5% then the standard deviation is
(a) 3.5 (b) 3 (c) 4.5 (d) 2.5

9) Which of the following is incorrect?
(a) $P(A) > 1$ (b) $0 \leq P(A) \leq 1$ (c) $P(\phi)=0$ (d) $P(A)+P(\tilde{A})=1$

10) The probability a red marble selected at random from a jar containing p red, q blue and r green marbles
(a) $\frac{q}{p+q+r}$ (b) $\frac{p}{p+q+r}$ (c) $\frac{p+q}{p+q+r}$ (d) $\frac{p+r}{p+q+r}$

11) A page is selected at random from a book. The probability that the digit at units place of the page numb chosen is less than 7 is
(a) $\frac{3}{10}$ (b) $\frac{7}{10}$ (c) $\frac{3}{9}$ (d) $\frac{7}{9}$

12) The probability of getting a job for a person is $\frac{x}{3}$. If the probability of not getting the job is $\frac{2}{3}$ then the value of x is
(a) 2 (b) 1 (c) 3 (d) 1.5

13) Kamalam went to play a lucky draw contest. 135 tickets of the lucky draw were sold. If the probability Kamalam winning is $\frac{1}{9}$, then the number of tickets bought by Kamalam is
(a) 5 (b) 10 (c) 15 (d) 20

14) 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) $\frac{3}{26}$

15) 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) $\frac{4}{5}$

10 x 2 =

16) Find the range and coefficient of range of the following data: 25, 67, 48, 53, 18, 39, 44.

17) Find the range of the following distribution..

Age (in years)	16-18	18-20	20-22	22-24	24-26	26-28

Number of students	0	4	6	8	2	2

18) The range of a set of data is 13.67 and the largest value is 70.08. Find the smallest value.

19) The number of televisions sold in each day of a week are 13, 8, 4, 9, 7, 12, 10. Find its standard deviati

20) Find the mean and variance of the first n natural numbers.

21) The mean and standard deviation of 15 observations are found to be 10 and 5 respectively. On rechecki it was found that one of the observation with value 8 was incorrect. Calculate the correct mean and standard deviation if the correct observation value was 23?

22) Express the sample space for rolling two dice using tree diagram.

23) A bag contains 5 blue balls and 4 green balls. A ball is drawn at random from the bag. Find the probabil that the ball drawn is (i) blue (ii) not blue.

24) Two dice are rolled. Find the probability that the sum of outcomes is (i) equal to 4 (ii) greater than 10 (i less than 13.

25) Two coins are tossed together. What is the probability of getting different faces on the coins?

13 x 5 =

26) Find the range and coefficient of range of the following data.
63, 89, 98, 125, 79, 108, 117, 68

27) Calculate the range of the following data..

Income	400-450	450-500	500-550	550-600	600-650
Number of workers	8	12	30	21	6

28) In a study about viral fever, the number of people affected in a town were noted as

Age in years	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Number of people affected	3	5	16	18	12	7	4

Find its standard deviation.

29) For a group of 100 candidates the mean and standard deviation of their marks were found to be 60 and respectively. Later on it was found that the scores 45 and 72 were wrongly entered as 40 and 27. Find th correct mean and standard deviation.

30) If the mean and coefficient of variation of a data are 15 and 48 respectively, then find the value of standard deviation.

31) If n = 5 , $\bar{x}$ =6, Σx^2=765 then calculate the coefficient of variation.

32) A bag contains 12 blue balls and x red balls. If one ball is drawn at random (i) what is the probability th it will be a red ball? (ii) If 8 more red balls are put in the bag, and if the probability of drawing a red bal will be twice that of the probability in (i), then find x.

33) Two unbiased dice are rolled once. Find the probability of getting
(i) a doublet (equal numbers on both dice)
(ii) the product as a prime number
(iii) the sum as a prime number
(iv) the sum as 1

34) Three fair coins are tossed together. Find the probability of getting
(i) all heads
(ii) atleast one tail
(iii) atmost one head
(iv) atmost two tails

35) A bag contains 5 red balls, 6 white balls, 7 green balls, 8 black balls. One ball is drawn at random from the bag. Find the probability that the ball drawn is
(i) white

(ii) black or red

(iii) not white

(iv) neither white nor black

36) The king and queen of diamonds, queen and jack of hearts, jack and king of spades are removed from a deck of 52 playing cards and then well shuffled. Now one card is drawn at random from the remaining cards. Determine the probability that the card is

(i) a clavor

(ii) a queen of red card

(iii) a king of black card.

37) If A, B, C are any three events such that probability of B is twice as that of probability of A and probability of C is thrice as that of probability of A and if $P(A \cap B) = \frac{1}{6}$, $P(B \cap C) = \frac{1}{4}$, $P(A \cap C), \frac{1}{8}$, $P(A\ P(A \cup B \cup C) = \frac{9}{10}$, $P(A \cap B \cap C) = \frac{1}{15}$, then find P(A), P(B) and P(C)?

38) The King, Queen and Jack of the suit spade are removed from a deck of 52 cards. One card is selected from the remaining cards. Find the probability of getting

(i) a diamond

(ii) a queen

(iii) a spade

(iv) a heart card bearing the number 5.