Choose the correct answer among (a), (b), (c) or (d)

1 - The mean of a distribution is 14 and the standard deviation is 5. What is the value of the coefficient of variation?

(a) 0.4 %   (b) 48.%   (c) 35.7 %   (d) Non of these

$$f(X) = \begin{cases} a\,x^2 & if\ 0 \leq x \leq 1 \\ 0 & otherwise \end{cases}$$ is a density function, it is required to answer the following questions.

2- The value of a is equal to

(a) 2   (b) 3   (c) 1   (d) Non of these

3 - P $(0.5 \leq x \leq 0.7)$ =

(a) 0.218   (b) 0.128   (c) 0.821   (d) Non of them

4- A discrete probability distribution has one parameter

(a) Bernoulli   (b) Binomial   (c) Normal   (d) Non of these

5- A discrete probability distribution has parameters 1 and P

(a) Bernoulli   (b) Binomial   (c) Poisson   (d) Non of these

6- The expected value of Binomial distribution is equal to.

(a) n p   (b) n x   (c) n (1-p)   (d) Non of them

7 - The variance of Poisson distribution is equal to.

(a) the mean   (b) n p (1-p)   (c) n (1-p)   (d)

8 - The expected value of Bernoulli distribution is equal to.

(a) n p   (b) n x   (c) n (1-p)   (d) Non of them

9- The variance of Bernoulli distribution is equal to.

(a) the mean   (b) n p (1-p)   (c) (1-p) p   (d) Non of them

$$f(X) = \begin{cases} 2x & if\ 0 \leq x \leq 1 \\ 0 & otherwise \end{cases}$$ is a density function, it is required to

Answer the following questions:

10- The expected value of the variable x is

(a) $\frac{1}{3}$ (b) $\frac{2}{3}$ (c) 1   (d) Non of them

11- The expected value of the variable x^2 is

(a) $\frac{1}{4}$ (b) $\frac{2}{4}$ (c) 2   (d) Non of the

12- The standard deviation of x is

(a) $\frac{1}{3}$ (b) $\frac{2}{3}$ (c) $\frac{1}{18}$ (d) Non of the

13- P (x $\leq$ 0. 3) =

(a) 0.99   (b) 0. 09   (c) 0.9   (d) Non of the

Given the following probability distribution of random variable X

X	-1	0	2
P (X)	$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$

it is required to answer the following questions.

14- The expected value of X is.

(a) - $\frac{1}{3}$ (b) $\frac{1}{3}$ (c) $\frac{2}{3}$ (d) Non of the

15- The expected value of X^2 is.

(a) $1\frac{2}{3}$ (b) $1\frac{1}{3}$ (c) - $\frac{2}{3}$ (d) Non of the

16- The standard deviation of X is.

(a) $\frac{1}{3}\sqrt{14}$ (b) $\frac{2}{3}\sqrt{7}$ (c) $\frac{14}{9}$ (d) Non of them

$f(X) = \begin{cases} e^{-x} & \text{if } x \geq 0 \\ 0 & \text{otherwise} \end{cases}$ is a density function, it is required to answer the following questions:

17- $\int_0^{\infty} e^{-x}\, dx =$

(a) 0   (b) ∞ (c) 1   (d) Non of th

18- $f(\infty) =$

(a) 0   (b) ∞ (c) 1   (d) Non of th

2

19- Tossing a balanced coin consecutive tree times, the probability of getting no heads.

(a) $\frac{7}{8}$ (b) $\frac{3}{8}$ (c) $\frac{1}{8}$ (d) Non of them

20- Tossing a balanced coin consecutive ten times, the number of outcomes in its sample space

(a) 124   (b) 2124   (c) 1024   (d) Non of them

21- Rolling a balanced die, the probability of getting a prime odd number is equal to

(a) $\frac{2}{3}$ (b) $\frac{1}{3}$ (c) $\frac{1}{6}$ (d) Non of them

22- Rolling a balanced die, the probability of getting no prime even number is equal to

(a) $\frac{2}{3}$ (b) $\frac{1}{3}$ (c) $\frac{5}{6}$ (d) Non of them

23- Rolling a balanced die twice, the probability of getting a sum of prime even number is

(a) $\frac{2}{36}$ (b) $\frac{1}{18}$ (c) $\frac{1}{36}$ (d) Non of them

24- Rolling a balanced die twice, the probability of getting a sum of prime even number is

(a) $\frac{2}{36}$ (b) $\frac{1}{18}$ (c) $\frac{1}{36}$ (d) Non of them

25- The number of outcomes if rolling a balanced die consecutive three times is

(a) 18   (b) 216   (c) 36   (d) Non of them

26- Rolling a balanced die twice, the probability of getting a sum of prime number divisible 3

(a) $\frac{2}{9}$ (b) $\frac{1}{18}$ (c) $\frac{1}{36}$ (d) Non of them

3

27- The quotient of the number of elements in an event space and the number of elements in a sample space.

(a) sample space   (b) event space   (c) union of events   (d) Non of them ✓

28- Given an event of P(A), the complement of this event is

(a) P(A)   (b) P(A) - 1   (c) 1 – P(A) ✓   (d) Non of them

29- Is $f(X) = \begin{cases} ax & \text{if } 0 \le x \le 1 \\ 0 & \text{otherwise} \end{cases}$ a density function ?

(a) Yes   (b) No   (c) May be ✓   (d) Non of them

30- $P(X) = p^x (1-p)^{1-x}$ is the function of .... distribution

(a) Uniform   (b) Poison   (c) Normal   (d) Non of them ✓

31- $f(X) = \begin{cases} \dfrac{1}{b-a} & \text{if } a \le x \le b \\ 0 & \text{otherwise} \end{cases}$ is the function of .... dist.

(a) Uniform ✓   (b) Poison   (c) Normal   (d) Non of them

32- The arrivals of cars at a service station are distributed as

(a) Uniform   (b) Poison ✓   (c) Bernoulli   (d) Non of them

33- Investigation of a production unit is distributed as

(a) Binomial   (b) Poison   (c) Bernoulli ✓   (d) Non of them

34- The expected value of Uniform distribution is

(a) (b-a) / 2   (b) (b + a) /-2 ✓   (c) $(1/12)(b+a)^2$ (d) Non of them

35- The variance of Uniform distribution is

(a) (b-a) / 2   (b) $(b - a)^2 /12$ ✓   (c) $(1/12)(b+a)^2$ (d) Non of them

36- Which one of these statistics is unaffected by outliers?

(a) Mean   (b) Interquartile range ✓   (c) Standard deviation   (d) Range

37- A list of 5 pulse rates is: 70, 64, 80, 74, 92. What is the median for this list?

(a) 74 ✓   (b) 76   (c) 77   (d) 80

38-The mean of a distribution is 14 and the standard deviation is 5. What is the value of the coefficient of variation?

(a) 48.3%   (b) 40 %   (c) 35 %   (d) 35.7%

39-Which of the following describe the middle part of a group of number?

(a) Measure of variability   (b) Measure of central tendency

(c) Measure of association   (d) Measure of shape

40- The sum of deviations about mean is always:

(a) Range   (b) Zero   (c) Positive   (d) Negative

41- The middle value of an ordered array of number is the

(a) Mode   (b) Median   (c) Mean   (d) Midpoint

42 The standard deviation of a population is 9 , the population variance is:

(a) 81   (b) 21   (c) 3   (d) 9

43- Sum of dots when two dice are rolled is:

(a) a discrete variable   (b) a continuous variable

(c) a qualitative variable   (d) a constant

44- The weights of students in a college is a

(a) a discrete variable   (b) a continuous variable

(c) a qualitative variable   (d) a constant

45- The mean deviation of the values 8 ,7 , 10 , 7 is:

(a) 2   (b) 3   (c) 1   (d) None of these

46- The standard deviation of 4, 4.4, 4, 4, 4 is:

5

(a) 4   (b) 8   (c) 12   (d) zero

47- The lowest value of variance is:

(a) -1   (b) zero   (c) 1   (d) None of these

Given the following frequency distribution:

Classes :	0-2	2-4	4-6	6-8	8-10
Freq. :	2	3	5	3	2

48- The mode of this distribution is:

(a) 5   (b) 10   (c) zero   (d) None of these

49- The arithmetic mean of this distribution is:

(a) 5   (b) 10   (c) zero   (d) None of these

Given

$$\sum X = 50 \ , \quad \sum Y = 37 \ , \quad \sum XY = 362 \ , \quad \sum X^2 \ , \quad \sum Y^2 = 283 \ , \quad n = 6$$

50-The coefficient of correlation between X and Y is:

(a) 0.98   (b) 0.90   (c) 0.88   (d) None.of these