(QQ) If the variance for the random variable x is 19 and the second moment about the origin is 100 then the first moment about the origin is-

(A) 9 **(B)** 2 **(C)** 6
(D) 1

(QQ) In an examination 40 percent students have failed in mathematics, 25 percent of the students have failed in chemistry and 10 percent have failed in both mathematics and chemistry. A student is selected at random. What is the probability that the student has failed in mathematics if it is known that he has failed in chemistry?

(A) 0.50 **(B)** 0.20
(C) 0.40 **(D)** 0.60

(QQ) The probability that a trainee will remain with a company is 0.7. The probability that an employee earns more than Rs. 20,000 per month is 0.4. The probability that an employee who is a trainee remained with the company or who earns more than Rs. 20,000 per month is 0.5. What is the probability that an employee earns more than Rs. 20,000 per month given that he is a trainee who stayed with the company?

ANS-. 6/7 or 0.85

(QQ) If the first moment about the origin for the random variable x is 10 and the variance is 0 then the second moment about the origin is-

(A) 100 **(B)** 10 **(C)** 6
(D)1

(QQ) A language class has only 3 students A,B and C and they independently attend the class. The probabilities of the attendance of A, B and C on a given day are 1/2, 1/3 and 3/4 respectively. Find the probability that the total number of attendance in 2 consecutive days is exactly 3.

(A) 1/3 **(B)** 2/3
(C) 3/8 **(D)** 1/24

(QQ) In a certain town, males and females form 50% of the population. It is known that 20% of the males and 5 % of the females are unemployed. A research student studying

unemployment situations selects unemployed persons at random. What is the probability that the person selected is male?

ANS- 0.80

(QQ) If the letters of the word 'VOWELS' be arranged at random, what is the probability that there are exactly two letters between E and O?

(A) 1/4 **(B)** 1/3
(C) 1/6 **(D)** 1/5

(QQ) A fair die is rolled. The probability of getting an even face given that face is less than 5 is given by:

(A) 0 **(B) 0.5** **(C) 0.6**
(D) 0.8

(QQ) Which one of these variables is a continuous random variable?

(A) The time it takes a randomly selected student to complete an exam.

(B) The number of tattoos a randomly selected person has.

(C) The number of women taller than 68 inches in a random sample of 5 women.

(D) The number of correct guesses on a multiple choice test.

(QQ) If a problem in Statistics is given to three students whose chances of solving it are 1/3, 2/3, 1/2 respectively.

Then the probability that the problem is solved if all of the three students try independently is:

(A) 1/2 (B) 3/8 (C) 1/9
(D) 8/9

(QQ) A random sample {x1, x2,...,xn} is taken from a normal population N(μ,1). Then

1n∑i=1nxi2 is an unbiased estimator of

(A) μ (B) μ^2+1 (C) μ^2
(D) μ^2−1

(QQ) A machine that winds steel cables for bridges averages three snags per mile of cable. If a bridge requires 0.26 mile of cable, what is the probability of no snag? (Given e-3= 0.15 and e-0.78= 0.46)

(A) 0.225 (B) 0.046 (C) 0.15
(D) 0.46

(QQ) If F(x)=x3 is the distribution function and f(x) is the P.D.F. of a continuous random variable 'X' in the interval [0,1], then f(x)=?

(A) 3x^2 (B) x^4/4 (C) x^2
(D) None of these

(QQ) If x is the random variable and the first and second moments about the origin are 20 and 4 respectively then the variance is

(A) 4 (B) 2 (C) 0.6
(D) 1

(QQ) The probability function of a random variable is defined as:

X

-1

-2

0

1

2

F(X)

K

2k

3k

4k

5k

Then k is equal to-

(A) 0 (B) 1/4 (C) 1/15
(D) 1

(QQ) If X is a Poisson variate with mean =10. then what is the probability of x=5 trial.

(A) 0.03783 (B) 0 (C) 0.5
(D) 0.68676

(QQ) If V(T1) =0.1 and V(T2)=0.001 then which one between T1 and T2 is less efficient-

(A) T1

(B) T2

(C) Both are equally efficient.

(D) We can't predict the efficiency based on the the given information.

(QQ) Find the parameters of the binomial distribution with mean 48 and the standard deviation 4?

(A) n = 72 and p = 1/3

(B) n = 144 and p = 1/3

(C) n = 144 and p = 2/3

(D) n = 72 and p = 2/3

(QQ) In a Binomial distribution with 6 independent trials, the probabilities of 3 and 4 successes are found to be 0.2457 and 0.0819 respectively. Find the parameter p of the binomial?

(A) 4/13 (B) 5/9 (C) 4/9
(D) 8/13

(QQ) In a binomial distribution consisting of 6 independent trials, the probability of 3 and 4 successes are 0.2457 and 0.0819 respectively. The parameter p of the binomial?

ANS-4/9

(QQ) If a coin is tossed 4 times then the probability of getting at most 3 heads is:

(A) 15/16 (B) 10/16 (C)
12/16 (D) 5/16

(QQ) If 'X' is a binomial variate with parameter 'p' such that n=6 and P(X=0)=0.5 and P(X=1)=0.25, then 'q'=?

(A) 12/13 (B) 1/13
(C) 1/6 (D) 1/7

(QQ) The average number of customers who appear at a counter of a certain bank per minute is two. Find the probability that during a given minute one or more than one customers appear? (Given e-2 = 0.135)

(A) 0.27 (B) 0.865 (C) 0.676 (D) 0.15

(QQ) Which of the following is correct?

(A) V(X)=E[{X-E(X)}^2] (B) V(X)=[E(X)]^2-E(X^2) (C) V(X)= E[X-E(X)] (D) V(X)=[X-E(X)]^2

(QQ) If a random variable follows Poisson distribution such that P(X=1) = P(X=2). Find the mean and variance of the distribution?

(A) Mean = 2 and Variance = 4

(B) Mean = 2 and Variance = 2

(C) Mean = 4 and Variance = 6

(D) Mean = 4 and Variance = 4

(QQ) Which of the following is not an assumption of Binomial Distribution?

(A) There are only two disjoint outcomes.

(B) The number of trials must be finite.

(C) Trials are independent.

(D) Trials are dependent.

(QQ) Consider the statistic T and if E(T2)= 600 and V(T)=25 then the T is unbiased of-

(A) 25 (B) 5 (C) 0
(D) 10

(QQ) which one of the statements below is correct?

(A) If the significance level is equal to 0.1, it implies that we are 10% confident that the population mean will lie between the confidence limits.

(B) If the sample size increases the confidence interval becomes wider.

(C) As the population standard deviation increases, the confident interval becomes narrower.

(D) A 90% confidence interval for the population mean is narrower than a 95% confidence interval for the population mean.

(QQ) In a sample of 9 observations, the sum of square of items from mean was 80.96. In another sample of 10 observations , the value was found to be 108.9. Test whether the difference in variance is significant at 5% level. Given F(8,9) = 3.18, F(9,8) = 1.15.

(A) Ho is accepted that the difference is not significant.

(B) Ho is rejected that the difference is not significant.

(C) Ho is accepted that the difference is significant.

(D) Ho is rejected that the difference is significant.

(QQ) Which of the following is correct for Chi Square-test for goodness of fit?

(A) Sum of the expected frequencies < Sum of the observed frequencies.

(B) Sum of the expected frequencies > Sum of the observed frequencies.

(C) Sum of the expected frequencies = Sum of the observed frequencies.

(D) Sum of the expected frequencies = 2(Sum of the observed frequencies)

(QQ) In a sample of 8 observations, the sum of square of items from mean was 84.4 and mean is 72. In another sample of 10 observations , the value was found to be 102.6 and mean 68. Test whether the difference in mean is significant at 5% level. Given table value of t at 16 d.o.f is 3.07.

(A) Ho is accepted that the difference is not significant.

(B) Ho is rejected that the difference is not significant.

(C) Ho is accepted that the difference is significant.

(D) Ho is rejected that the difference is significant.

(QQ) Consider the statistic T and if E(T)= 5 and V(T)=0.05 then the T2 is unbiased of,

(A) 25 (B) 25.05 (C) 5.05
(D) 24.05

(QQ) One problem with hypothesis testing is that a real effect may not be detected. This problem is most likely to occur when

(A) the effect is small and the sample size is small.

(B) the effect is large and the sample size is small.

(C) the effect is small and the sample size is large.

(D) the effect is large and the sample size is large.

(QQ) To fit a non-linear curve Y=a+bX+cX2 to a data, which of the following sums is not required?

(A) Sum of the values of variable 'X^2'

(B) Sum of the values of variable 'Y'

(C) Sum of the values of variable 'XY'

(D) Sum of the values of variable 'Y^2'.

(QQ) Two samples of sizes 25 and 35 are independently drawn from two normal populations, where the unknown variances are assumed to be equal. The number of degrees of freedom for the equal-variances t-test statistic is:

(A) 58 (B) 60 (C) 62
(D) 57

(QQ) If V(T1) < V(T2) then T1 is,

(A) Unbiased (B) Efficient (C) Sufficient
(D) Consistent

(QQ) In a locality of 20000 families a sample of 900 families was selected at random. Of these 900 families 250 families were found to have a monthly income of Rs.500 or less. Find the probable limit of proportion for the families having a monthly income of Rs.500 or less?

(A) 0.20 to 0.29 (B) 0.129 to 0.411 (C) 0.359 to 0.288
(D) 0.27 to 0.73

(QQ) In a one-tail test for the population mean, if the null hypothesis is not rejected when the alternative hypothesis is true, then:

(A) Type I error is committed

(B) Type II error is committed

(C) A correct decision is made

(D) A two-tail test should be used instead of a one-tail test

(QQ) If the variance of three estimators A, B, and C are given as

V(A) =0.1, V(B) =0.01, and V(C) =0.001 then,

(A) Estimator A is better than B and C

(B) Estimator B is better than A and C

(C) Estimator C is better than B and A

(D) Estimator A is better than B

(QQ) If for the n=4 data,

$\sum x = 19$ $\sum y = 24$ $\sum X2 = 20.75$ $\sum Y2 = 26$ and

The coefficient of correlation is 0.9902

Then $\sum XY$ =?

(A) 23 (B) 24 (C) It's not available in the option (D) 26

(QQ) Which of the following statements correctly describes a difference between the F and t distributions?

(A) The F distribution is discrete, the t distribution is continuous

(B) The t distribution is valid only for positive numbers, the F for all real values

(C) The F distribution is symmetrical, the t distribution is skewed to the right

(D) The F distribution is valid only for positive numbers, the t for all real values

(QQ) If b(X,Y) is regression coefficient of X on Y, r(X,Y) is correlation coefficient and S.D.(X) is standard deviation in X then b(X,Y)=?

(A) r(X,Y)/S.D.(X)

(B) r(X,Y) /S.D.(Y)

(C) r(X,Y)/[S.D.(X)*S.D.(Y)]

(D) [r(X,Y)*S.D.(X)]/S.D.(Y)

(QQ) In a random sample of 300 persons of a town, 180 are found to be tea drinkers. In a sample of 500 persons from another town, 200 are found to be tea drinkers. What is the standard error?

(A) 0.04 (B) 0.072 (C) 0.051
(D) 0.088

(QQ) What should you conclude if the two lines of regression (y on x, and x on y) are perpendicular to each other?

(A) The correlation coefficient = 0

(B) The correlation coefficient = 1

(C)The correlation coefficient = -1

(D) No conclusion can drawn

(QQ) From the 16 data, the calculated mean is 100 and the standard deviation is 5. If the hypothesis mean is 95 Then the calculated t-test value is---

(A) 4 (B) 2 (C) 8
(D) Data is insufficient

(QQ) From the regression line 16x=9y 94, find the regression coefficient x on y?

ANS- 9/16

(QQ) Which of the following is a necessary condition for using a t distribution table?

(A) n is small

(B) s is known but σ is not

(C) the population is finite

(D) (a) and (b) but not (c)

(QQ) If the regression coefficient of x on y is-1/6 and that of y on xis-3/8, find the correlation coefficient between x and y?

ANS-?

(QQ) What is our decision for a goodness-of-fit test with a computed value of chi-square of 1.273 and a critical value of 13.388?

(A) Do not reject the null hypothesis

(B) Reject the null hypothesis

(C) Unable to reject or not reject the null hypothesis based on data

(D) Should take a larger sample

(QQ) A random sample of recorded deaths in a city in India during the last year showed an average life span of 70 years. Does the average life span today is equal to 68 years with a standard deviation of 0.75. Use 5% level of significance.

(A) Ho is expected and concluded that average life span today is greater than 68 years.

(B) Ho is rejected and concluded that average life span today is greater than 68 years.

(C) Ho is rejected and concluded that average life span today is not equal to 68 years.

(D) Ho is expected and concluded that average life span today is equal to 68 years.

(QQ) From the two regression line from certain data, calculate coefficient of correlation:

16x=4y +16 and 4y=9x-8

ANS-?

(QQ) If r = 0.6, byx = 1.2 then bxy = ?

(A) 0.3 (B)0.2 (C) 0.72
(D)0.40

QQ)Correlation between two variables refers to calculate the

Association

Dependency

strength of relationship

degree of relationship

Q.
If one of the regression coefficients is greater than 1, then the other must be:
A. greater than 1
B. equal to 1
C. less than 1
D. zero

Q)In regression analysis, the variable that is being predicted is the

response or dependent variable

independent variable
intervening variable
is usually x

QQ)Coefficient of Correlation values lies between

-1 and +1

0 and 1

-1 and 0

-infinity to +infinity

QQ)In a random sample of 600 people of a city, it was found that 200 preferred seafood. Find a 95% confidence interval for the actual proportion of people who preferred sea food?

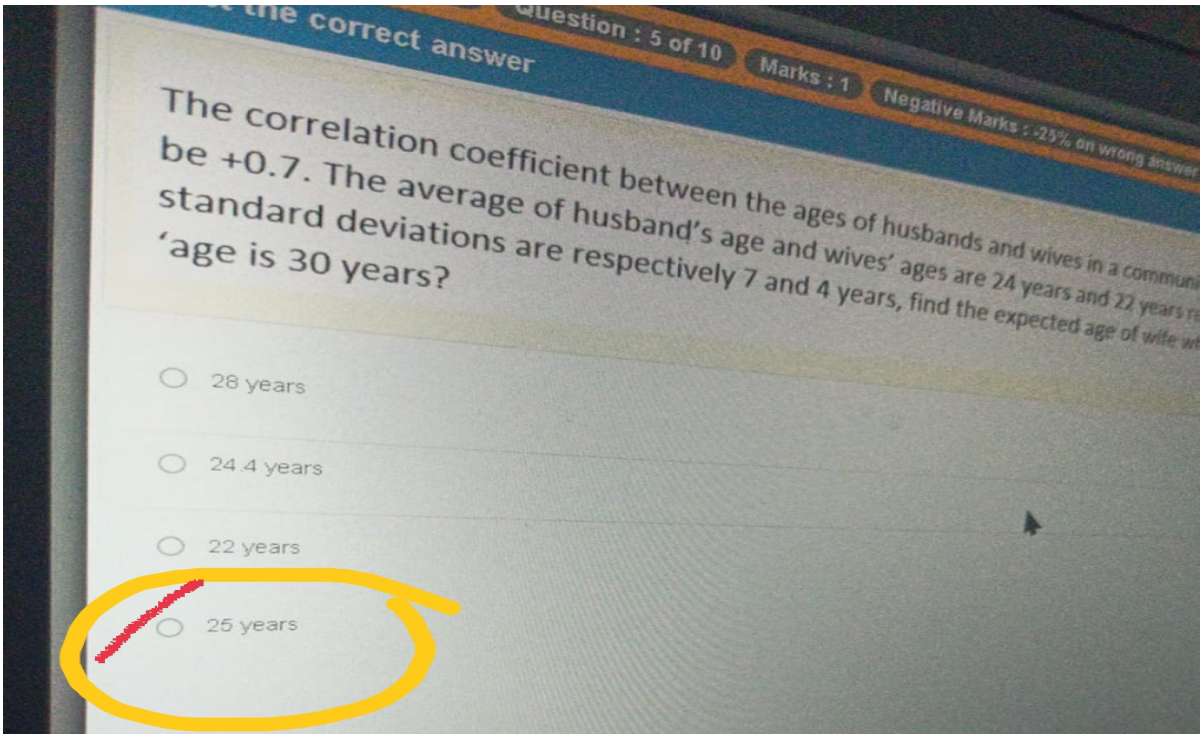
0.295 TO 0.371

QQ)If we have $f(x) = 2x, 0 \leq x \leq 1$, then f(x) is a:

Probability distribution

Probability density function

Distribution function
Continuous random variable


the correct answer
Question : 5 of 10
Marks : 1
Negative Marks : -25% on wrong answer
The correlation coefficient between the ages of husbands and wives in a commun
be +0.7. The average of husband's age and wives' ages are 24 years and 22 years r
standard deviations are respectively 7 and 4 years, find the expected age of wife w
'age is 30 years?
28 years
24.4 years
22 years
25 years