

Quiz 3

Due Mar 12 at 23:59

Points 5

Questions 10

Time Limit 60 Minutes

Available Mar 11 at 18:00 - Mar 12 at 23:59

Instructions

Quiz 3 is scheduled from 11th March 2023, 6:00 pm to 12th March 2023, 11:59 pm.

- Number of questions - 10
- Each question carries 0.5 M
- Time duration - 1 Hour
- Read the question properly and answer.

All the best!!!!

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	35 minutes	5 out of 5

! Correct answers will be available on Mar 13 at 18:00.

Score for this quiz: 5 out of 5

Submitted Mar 12 at 20:01

This attempt took 35 minutes.

Question 1

0.5 / 0.5 pts

Qualitative data uses which of the following scale

- Ordinal scale only
- Nominal scale only
- Interval scale only
- Both nominal and ordinal scales

Question 2

0.5 / 0.5 pts

A die is thrown once. What is the probability that the score is a factor of 12?

- 3/6
- 2/6
- 5/6
- 4/6

Question 3

0.5 / 0.5 pts

25% of the children in a school have a dog. 60% have a cat and 15 % have a dog and a cat. What is the probability of those who have a dog also have a cat?

 3/5

 1/5

 2/5

 4/5**Question 4**

0.5 / 0.5 pts

In a binomial distribution, if $n=15$, $p=0.25$ then the value of $P(X=5)$ is

 0.6865

 0.8516

 0.1651

 0.1561

Question 5

0.5 / 0.5 pts

If X and Y are independent poisson variates such that $P(X=1)=P(X=2)$ and $P(Y=2)=P(Y=3)$. Find the variance of $X - 2Y$.

 12 14 18 16**Question 6**

0.5 / 0.5 pts

For $f(x)$ to be discrete probability distribution $f(x)$ should satisfy the following conditions:

 $f(x) \geq 0 \text{ & } \sum_x f(x) < 1$

$f(x) \leq 0 \text{ & } \sum_x f(x) = 1$

$f(x) \leq 0 \text{ & } \sum_x f(x) > 1$

$f(x) \geq 0 \text{ & } \sum_x f(x) = 1$

Question 7

0.5 / 0.5 pts

Suppose the top 2% of JEE aspirants(students who appeared for JEE advanced exam) will get admission in IIT. If the score of JEE-advanced is normally distributed with mean 500 and standard deviation 100 then how much minimum marks should be score to get admission in IIT.

705

750

725

None of these

Question 8

0.5 / 0.5 pts

In a survey, it is noticed that the mean age of the person experienced heart attack is 34 years with standard deviation 15 years. If we take a sample of 100 persons then what is the probability that the sample mean age of persons experienced heart attack is more than 32 years.

 0.8842 0.7282 None of these 0.9082**Question 9**

0.5 / 0.5 pts

From a large lot of oranges a random sample of 700 oranges was drawn and 60 were found to be bad. Then the confidence interval at 2% level of significance for the percentage of bad oranges in this lot is _____

 (0.01133,0.03265) (0.06734, 0.13265)

None of these

(-0.13265,-0.06734)

Question 10

0.5 / 0.5 pts

1. If we accept a Null hypothesis, when it is false then this is an error of type _____

I

Can't be determined

II

BOTH

Quiz Score: 5 out of 5

Quiz 3

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All the best!!!!

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	60 minutes	4.5 out of 5

! Correct answers will be available on Mar 13 at 18:00.

Score for this quiz: 4.5 out of 5

Submitted Mar 12 at 20:03

This attempt took 60 minutes.

Question 1

0.5 / 0.5 pts

If mean=62.6, median=62.5 then mode=?

61.3

62.3

63.3

62.8

Incorrect

Question 2

0 / 0.5 pts

A bag contains two white shoes, 2 brown shoes and 3 black shoes. Two shoes are drawn at random then find the probability that they are in same color.

9/21

5/21

5/7

1/7

Question 3

0.5 / 0.5 pts

25% of the children in a school have a dog. 60% have a cat and 15 % have a dog and a cat. What is the probability of those who have a dog also have a cat?

4/5

3/5

1/5

2/5

Question 4

0.5 / 0.5 pts

If mean and variance of Binomial distribution are 8,4 respectively. Then $P(X=1)$ is

1/4096

1/2

1/16

1/8

Question 5

0.5 / 0.5 pts

The number of customers arriving at a grocery store can be modelled by a poisson process with $\lambda=8$ customers per hour. What is the probability that there are 3 customers between 9.30 A.M and 9.45 A.M?

$\frac{4e^{-4}}{3}$

$\frac{e^{-2}}{3}$

$\frac{4e^{-2}}{3}$

$\frac{2e^{-3}}{3}$

Question 6

0.5 / 0.5 pts

A fair and an unfair coin with $P(T)=3/4$ are tossed three times simultaneously . Let X be a random variable which denote the number of heads shown by fair coin and Y denotes the number of heads shown by unfair coin then $P(X=Y)$ is _____

1/2

136/512

- 128/512
- None of these

Question 7

0.5 / 0.5 pts

Let the random variable 'X' follows normal distribution with mean 70 and standard deviation 13. What is the value of $P(60 < X < 90)$?

- 0.1717
- 0.8716
- 0.7176
- 0.1617

Question 8

0.5 / 0.5 pts

Random samples of size 100 are drawn from a population with mean 100 and standard deviation 25. what is the standard deviation of sample mean?

- 4.5
- 3.5
- 1.5
- 2.5

Question 9

0.5 / 0.5 pts

A survey is conducted on 1300 students in a school to find the proportion of students who are interested in taking a music course. The upper and lower limits are 0.746 and 0.582. Calculate the point estimate and margin of error.

0.464 and 0.282

0.664 and 0.082

0.264 and 0.482

0.364 and 0.382

Question 10

0.5 / 0.5 pts

If you want to test the null hypothesis that the mean is 100 versus the alternative that it is greater than 100 and you get a sample mean of 90, which is true?

Cannot say anything, because the standard deviation and the sample size are needed

Never reject the null hypothesis

Always reject the null hypothesis

Reject the null if $n > 30$, otherwise fail to reject

Quiz Score: 4.5 out of 5

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All the best!!!!

Attempt History

	Attempt	Time	Score
LATEST	<u>Attempt 1</u>	35 minutes	4.5 out of 5

! Correct answers will be available on Mar 13 at 18:00.

Score for this quiz: **4.5** out of 5

Submitted Mar 12 at 19:56

This attempt took 35 minutes.

Question 1

0.5 / 0.5 pts

What is the standard deviation of 1,2,3,4,5,6 ?

1.505

1.805

2.345

1.707

Question 2**0.5 / 0.5 pts**

A fair die is thrown. What is the probability that the score is not a factor of 30?

1/6

4/6

3/6

2/6

Incorrect**Question 3****0 / 0.5 pts**

Let S be a sample space and X and Y are the two events associated with sample space S. Suppose

$P(X \cap Y) = \frac{1}{5}$, $P(X) = \frac{3}{5}$, $P(Y) = \frac{3}{10}$ then which of the following option(s) is/are correct?

- a) $P(X|Y)=2/3$
- b) $P(Y|X)=1/3$
- c) X and Y are independent
- d) X and Y are dependent

a, b, c

a, c, d

a, b, d

b, c, d

Question 4**0.5 / 0.5 pts**

If a random variable X follows a binomial distribution with parameters n and p, what is the expected value of X?

p/n

n(1-p)

np

n/p

Question 5**0.5 / 0.5 pts**

If X is a Poisson variate such that $P(X=2)=9P(X=4)+90P(X=6)$ then find the mean of X

1

4

2

3

Question 6**0.5 / 0.5 pts**

For two random variables X and Y with joint PMF given in the table below, $P(X=0, Y \leq 1) = \underline{\hspace{2cm}}$

	Y=0	Y=1	Y=2
X=0	1/6	1/4	1/8
X=1	1/8	1/6	1/6

 1/6 5/12 6/13 1/4**Question 7**

0.5 / 0.5 pts

Suppose the top 2% of JEE aspirants(students who appeared for JEE advanced exam) will get admission in IIT. If the score of JEE-advanced is normally distributed with mean 500 and standard deviation 100 then how much minimum marks should be score to get admission in IIT.

 None of these 705 750 725**Question 8**

0.5 / 0.5 pts

Random samples of size 100 are drawn from a population with mean 100 and standard deviation 25. what is the standard deviation of sample mean?

4.5 1.5 2.5 3.5**Question 9****0.5 / 0.5 pts**

A survey is conducted on 1300 students in a school to find the proportion of students who are interested in taking a music course. The upper and lower limits are 0.746 and 0.582. Calculate the point estimate and margin of error.

 0.664 and 0.082 0.264 and 0.482 0.464 and 0.282 0.364 and 0.382**Question 10****0.5 / 0.5 pts**

If the null hypothesis is false then which of the following is accepted?

 Positive Hypothesis Alternative Hypothesis. Negative Hypothesis Null Hypothesis

Quiz Score: **4.5** out of 5

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LATEST	<u>Attempt 1</u>	35 minutes	4.5 out of 5

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Score for this quiz: **4.5** out of 5

Submitted Mar 12 at 19:10

This attempt took 35 minutes.

Question 1

0.5 / 0.5 pts

The mean of ten numbers is 58 if one of the numbers is 40, what is the mean of other nine

120

15

60

88

Question 2**0.5 / 0.5 pts**

In a box, there are 5 orange, 8 mango, and 9 apples. If a fruit is picked up randomly, what is the probability that it is neither orange nor mango?

 13/22 8/22 9/22 5/22**Question 3****0.5 / 0.5 pts**

If a number is selected at random from the first 100 natural numbers, what will be the probability that the selected number is a perfect cube?

 3/25 2/25 4/25 1/25**Question 4****0.5 / 0.5 pts**

In a true-false examination Roshan guessed all the answers. If there are 6 questions then what is the probability that Roshan answers at most 3 answers correctly?

0.656 0.5 0.9393 0.344**Question 5****0.5 / 0.5 pts**

A computing system manager states that the rate of interruptions to the internet service is 0.2 per week. Find the probability of one interruption in 3 weeks using Poisson distribution.

 0.1637 0.3292 0.4235 0.5678**Question 6****0.5 / 0.5 pts**

The joint cumulative distribution function $F(x,y)$ lies with in the limits

 0 and 1 -1 and 0 -1 and 1 $-\infty$ and 0

Question 7**0.5 / 0.5 pts**

What is the probability that the random variable following normal distribution will take values between $\mu + 2\sigma$ to $\mu - 2\sigma$?

- About 99.75%
- About 68%
- About 95%
- Can't say

Question 8**0.5 / 0.5 pts**

Let T be the time that is needed for a specific task in a factory to be completed. In order to estimate the mean and variance of T , we observe a random sample T_1, T_2, \dots, T_6 . Thus, T_i 's are i.i.d. and have the same distribution as T . We obtain the following values (in minutes): 18, 21, 17, 16, 24, 20. The sample mean, the sample variance, and the sample standard deviation for the observed sample are

- 19.22, 8.67, 2.84
- 19.22, 8.37, 2.94
- 19.33, 8.67, 2.94
- 19.22, 8.67, 2.94

Question 9**0.5 / 0.5 pts**

Considering the sample size, the sampling distribution standard error decreases when

- Margin of error decreases
- margin of error increases
- Size of sample increases
- Size of sample decreases

Incorrect**Question 10****0 / 0.5 pts**

The 95% confidence interval for the proportion of students who work in part time jobs is $(0.0815, 0.1785)$. The sample proportion of students who work in part time job is known to be 0.13. What sample size is used to obtain this confidence interval?

- 185
- 206
- 200
- 173

Quiz Score: 4.5 out of 5

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- Number of questions - 10
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All the best!!!!

Attempt History

	Attempt	Time	Score
LATEST	<u>Attempt 1</u>	23 minutes	4.5 out of 5

! Correct answers will be available on Mar 13 at 18:00.

Score for this quiz: **4.5** out of 5

Submitted Mar 12 at 18:23

This attempt took 23 minutes.

Question 1**0.5 / 0.5 pts**

Which of the following is true.

- Mean is not affected by extreme values
- Median cannot easily be used to estimate population parameter.
- Median can easily be used to estimate population parameter.
- Median is affected by extreme values

Question 2**0.5 / 0.5 pts**

A die is thrown twice. What is the probability that both numbers are even prime?

- 1/6
- 1/36
- 1/3
- 1/2

Incorrect

Question 3

0 / 0.5 pts

White and red balls are contained in a bag. A total of two balls are chosen without being replaced. The odds of picking a white ball first and subsequently a red ball are 0.28. On the first draw, there is a 0.5 chance of selecting a white ball. Given that the first ball drawn was white, calculate the chance of selecting a red ball on the second draw.

-
- None of the above
 - 59/100
 - 58/100
 - 14/25
-

Question 4

0.5 / 0.5 pts

If X follows a binomial distribution $B(n, 0.2)$. If $E(X) = 5$ then the sample size n is ----- and $V(X)$ is -----

- n = 25 and V(X) = 5
- n = 15 and V(X) = 4
- n = 20 and V(X) = 4
- n = 25 and V(X) = 4

Question 5

0.5 / 0.5 pts

A book of 200 pages contains 200 misprinted. Estimate the probability that a given page contains at least 2 misprints

- 0.423
- 0.29
- 0.2642
- 0.3243

Question 6

0.5 / 0.5 pts

If the joint probability density function of the random variable(x, y) is given by

$f(x,y) = 2, 0 \leq x \leq y \leq 1$ then $f_y(y)$ is

2y

y

3y

5y

Question 7**0.5 / 0.5 pts**

Let the random variable 'X' follows normal distribution with mean 70 and standard deviation 13. What is the value of $P(60 < X < 90)$?

0.1717

0.1617

0.8716

0.7176**Question 8****0.5 / 0.5 pts**

Random samples of size 100 are drawn from a population with mean 100 and standard deviation 25. what is the standard deviation of sample mean?

 3.5 2.5 1.5 4.5**Question 9****0.5 / 0.5 pts**

1. What is the best description of a point estimate?

 the margin of error used to estimate a parameter

- All of the above
- a sample statistic used to estimate a parameter

- any value from the sample used to estimate a parameter

Question 10**0.5 / 0.5 pts****A statement made about a population for testing purposes is called**

- Type I error
- Hypothesis
- Statistics
- Level of Significance

Quiz Score: 4.5 out of 5

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All the best!!!!

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	13 minutes	5 out of 5

! Correct answers will be available on Mar 13 at 18:00.

Score for this quiz: **5 out of 5**

Submitted Mar 12 at 14:51

This attempt took 13 minutes.

Question 1	0.5 / 0.5 pts
Which of the following is not measure of central tendency	
<input type="radio"/> Mean	
<input type="radio"/> Mode	
<input type="radio"/> Median	

Quartiles**Question 2****0.5 / 0.5 pts**

A box contains 4 red pencils and 5 green pencils. Two pencils are drawn without replacement. If the first pencil is red, what is the probability that the second pencil is green?

 5/9 5/8 2/5 2/9**Question 3****0.5 / 0.5 pts**

If $P(A) = 5/7$, $P(B) = 3/7$ and $P(A \cup B) = 6/7$

Evaluate: $P(AB)$, $P(A|B)$, $P(B|A)$

 2/7, 2/3, 2/5 1/7, 1/3, 1/5 2/7, 1/3, 1/5 1/4, 1/5, 1/3

Question 4**0.5 / 0.5 pts**

If a random variable X follows a binomial distribution with parameters n and p, what is the probability of getting exactly k success in n trials?

-
- $(n - k)p^k$
 - $p^k(1 - p)^n$
 - $n_k p^k (1 - p)^{n-k}$
 - $k p^n$
-

Question 5**0.5 / 0.5 pts**

If a random variable X follows a Poisson distribution with parameter λ , what is the variance of X?

-
- 2λ
 - λ^2
 - λ
 - $\frac{1}{\lambda}$
-

Question 6**0.5 / 0.5 pts**

If the joint probability density function of the random variable(x, y) is given by

$f(x,y) = 2, 0 \leq x \leq y \leq 1$ then $f_y(y)$ is

y

2y

3y

5y

Question 7**0.5 / 0.5 pts**

Suppose that internet usage in a certain area follows normal distribution with mean 80 hours per week and standard deviation 7 hours per week. The people who are using the internet above 89 hours per week and below 95 hours per week have the possibility of getting mild migraine headaches, what percent of the population in that area will be affected by migraine headaches?

0.5%

18%

8%

2%

Question 8**0.5 / 0.5 pts**

Random samples of size 100 are drawn from a population with mean 100 and standard deviation 25. what is the standard deviation of sample mean?

 1.5 3.5 2.5 4.5**Question 9****0.5 / 0.5 pts**

A statistic is an unbiased estimator of a parameter if:

 $E(\text{sample mean}) = \text{proportion}$ $E(\text{statistic}) = \text{parameter}$ $E(\text{mean}) = \text{variance}$ $E(\text{variance}) = \text{mean}$ **Question 10****0.5 / 0.5 pts**

If the null hypothesis is false then which of the following is accepted?

- Null Hypothesis
- Alternative Hypothesis.
- Positive Hypothesis
- Negative Hypothesis

Quiz Score: **5** out of 5

Quiz 3

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All the best!!!!

Attempt History

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LATEST	Attempt 1	10 minutes	5 out of 5

! Correct answers will be available on Mar 13 at 18:00.

Score for this quiz: **5 out of 5**

Submitted Mar 12 at 17:54

This attempt took 10 minutes.

Question 1	0.5 / 0.5 pts
Which one of the following variables is not categorical?	
<input type="radio"/> Choice on a test item (true or false)	
<input checked="" type="radio"/> Age of a person	
<input type="radio"/> Marital status of a person(single, married, divorced, other)	

- Gender of person(male or female)

Question 2

0.5 / 0.5 pts

A bag contains 6 balls and 4 marbles. Out of them two are selected randomly without replacement. What is the probability to get a ball in the first draw and a marble in the second draw?

- 1/15
- 2/15
- 3/15
- 4/15

Question 3

0.5 / 0.5 pts

Let E and F be events of a sample space S of an experiment, if $P(S|F) = P(F|F)$, then value of $P(F|F)$ is _____

- 1
- 2
- 0
- 1

Question 4

0.5 / 0.5 pts

In a true-false examination Roshan guessed all the answers. If there are 6 questions then what is the probability that Roshan answers at most 3 answers correctly?

0.344

0.656

0.5

0.9393

Question 5

0.5 / 0.5 pts

Given that X has a poisson distribution with Mean = 1.1, What is the probability that $X=0$?

3.3328

0

0.3328

0.3343

Question 6

0.5 / 0.5 pts

If the joint probability density function of the random variable(x, y) is given by

$f(x,y) = 2$, $0 \leq x \leq y \leq 1$ then $f_y(y)$ is

- y
- 5y
- 3y
- 2y

Question 7

0.5 / 0.5 pts

If X is a Gaussian (Normal) (μ, σ) random variable, the cumulative distribution of X is $F_X(x)$. The probability that X is in the interval $(a, b]$ is

- $F_X(b)$
- $F_X(a)$
- $F_X(b) - F_X(a)$
- $F_X(a) - F_X(b)$

Question 8

0.5 / 0.5 pts

Let T be the time that is needed for a specific task in a factory to be completed. In order to estimate the mean and variance of T , we observe a random sample T_1, T_2, \dots, T_6 . Thus, T_i 's are i.i.d. and have the same distribution as T . We obtain the following values (in minutes): 18, 21, 17, 16, 24, 20. The sample mean, the sample

variance, and the sample standard deviation for the observed sample are

19.22, 8.67, 2.94

19.33, 8.67, 2.94

19.22, 8.67, 2.84

19.22, 8.37, 2.94

Question 9

0.5 / 0.5 pts

Find the 99% confidence interval estimate if the sample mean $\bar{X} = 0$, the sample size $n=121$ and $\sigma=11$.

-1.133365 to 1.133365

-4.722354 to 4.722354

-1.888941 to 1.888941

-2.575829 to 2.575829

Question 10

0.5 / 0.5 pts

A T-test sample has 8 pairs of samples. The distribution should contain

16 degrees of freedom

7 degrees of freedom

5 degrees of freedom

6 degrees of freedom

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	Attempt	Time	Score
LATEST	<u>Attempt 1</u>	36 minutes	5 out of 5

! Correct answers will be available on Mar 13 at 18:00.

Score for this quiz: **5 out of 5**

Submitted Mar 12 at 17:48

This attempt took 36 minutes.

Question 1

0.5 / 0.5 pts

Which of the following measure of variation is based on middle 50% of a data?

Standard deviation

Range

Mean Deviation

Interquartile range

Question 2**0.5 / 0.5 pts**

A bag contains 6 balls and 4 marbles. Out of them two are selected randomly without replacement. What is the probability to get a ball in the first draw and a marble in the second draw?

 3/15

 1/15

 4/15

 2/15**Question 3****0.5 / 0.5 pts**

If a number is selected at random from the first 100 natural numbers, what will be the probability that the selected number is a perfect cube?

 4/25

 1/25

 2/25

 3/25**Question 4****0.5 / 0.5 pts**

A man makes attempts to hit the target. The probability of hitting the target is $3/5$. Then the probability that A hits the target exactly 2 times in 5 attempts is

72/3125 144/625 216/625 144/3125**Question 5**

0.5 / 0.5 pts

Suppose that a book of 600 pages contains 40 printing mistakes. Assume that these errors are randomly distributed throughout the book and x , the number of errors per page has a Poisson distribution. What is the probability that 10 pages selected at random will be free of errors ?

 $\frac{1}{3}e^{-1}$ $\frac{1}{3}e^{-2}$ $e^{-\frac{2}{3}}$ $2e^{-\frac{1}{3}}$ **Question 6**

0.5 / 0.5 pts

If two random variables X and Y have the joint density function

$$f_{X,Y}(x,y) = \begin{cases} \frac{6}{5}(x^2 + y) & \text{for } 0 \leq x \leq 1, 0 \leq y \leq 1 \\ 0 & \text{otherwise} \end{cases}$$

the probability that $0.2 < X < 0.5$ is

- 0.8622
- 0.2268
- 0.2668
- 0.2686

Question 7**0.5 / 0.5 pts**

Suppose the top 2% of JEE aspirants(students who appeared for JEE advanced exam) will get admission in IIT. If the score of JEE-advanced is normally distributed with mean 500 and standard deviation 100 then how much minimum marks should be score to get admission in IIT.

- None of these
- 750
- 705
- 725

Question 8**0.5 / 0.5 pts**

In a survey, it is noticed that the mean age of the person experienced heart attack is 34 years with standard deviation 15 years. If we take a sample of 100 persons then what _____ the probability that the sample mean age of persons experienced heart attack is more than 32 years.

None of these

0.9082

0.8842

0.7282

Question 9

0.5 / 0.5 pts

If the point estimate is 8 and the margin of error is 4 then confidence interval is

2 to 8

5 to 15

3 to 13

4 to 12

Question 10

0.5 / 0.5 pts

1. If we accept a Null hypothesis, when it is false then this is an error of type _____

I II Can't be determined BOTH

Quiz Score: 5 out of 5

Quiz 3

Due Mar 12 at 23:59

Points 5

Questions 10

Available Mar 11 at 18:00 - Mar 12 at 23:59

Time Limit 60 Minutes

Instructions

Quiz 3 is scheduled from 11th March 2023, 6:00 pm to 12th March 2023, 11:59 pm.

- Number of questions - 10
- Each question carries 0.5 M
- Time duration - 1 Hour
- Read the question properly and answer.

All the best!!!!

Attempt History

	Attempt	Time	Score
LATEST	<u>Attempt 1</u>	36 minutes	5 out of 5

! Correct answers will be available on Mar 13 at 18:00.

Score for this quiz: **5 out of 5**

Submitted Mar 12 at 17:48

This attempt took 36 minutes.

Question 1

0.5 / 0.5 pts

Which of the following measure of variation is based on middle 50% of a data?

Standard deviation

Range

Mean Deviation

Interquartile range

Question 2**0.5 / 0.5 pts**

A bag contains 6 balls and 4 marbles. Out of them two are selected randomly without replacement. What is the probability to get a ball in the first draw and a marble in the second draw?

 3/15

 1/15

 4/15

 2/15**Question 3****0.5 / 0.5 pts**

If a number is selected at random from the first 100 natural numbers, what will be the probability that the selected number is a perfect cube?

 4/25

 1/25

 2/25

 3/25**Question 4****0.5 / 0.5 pts**

A man makes attempts to hit the target. The probability of hitting the target is $3/5$. Then the probability that A hits the target exactly 2 times in 5 attempts is

72/3125 144/625 216/625 144/3125**Question 5**

0.5 / 0.5 pts

Suppose that a book of 600 pages contains 40 printing mistakes. Assume that these errors are randomly distributed throughout the book and x , the number of errors per page has a Poisson distribution. What is the probability that 10 pages selected at random will be free of errors ?

 $\frac{1}{3}e^{-1}$ $\frac{1}{3}e^{-2}$ $e^{-\frac{2}{3}}$ $2e^{-\frac{1}{3}}$ **Question 6**

0.5 / 0.5 pts

If two random variables X and Y have the joint density function

$$f_{X,Y}(x,y) = \begin{cases} \frac{6}{5}(x^2 + y) & \text{for } 0 \leq x \leq 1, 0 \leq y \leq 1 \\ 0 & \text{otherwise} \end{cases}$$

the probability that $0.2 < X < 0.5$ is

- 0.8622
- 0.2268
- 0.2668
- 0.2686

Question 7**0.5 / 0.5 pts**

Suppose the top 2% of JEE aspirants(students who appeared for JEE advanced exam) will get admission in IIT. If the score of JEE-advanced is normally distributed with mean 500 and standard deviation 100 then how much minimum marks should be score to get admission in IIT.

- None of these
- 750
- 705
- 725

Question 8**0.5 / 0.5 pts**

In a survey, it is noticed that the mean age of the person experienced heart attack is 34 years with standard deviation 15 years. If we take a sample of 100 persons then what _____ the probability that the sample mean age of persons experienced heart attack is more than 32 years.

None of these

0.9082

0.8842

0.7282

Question 9

0.5 / 0.5 pts

If the point estimate is 8 and the margin of error is 4 then confidence interval is

2 to 8

5 to 15

3 to 13

4 to 12

Question 10

0.5 / 0.5 pts

1. If we accept a Null hypothesis, when it is false then this is an error of type _____

I II Can't be determined BOTH

Quiz Score: 5 out of 5

Quiz 3

Due Mar 12 at 23:59

Points 5

Questions 10

Available Mar 11 at 18:00 - Mar 12 at 23:59

Time Limit 60 Minutes

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All the best!!!!

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	49 minutes	4 out of 5

! Correct answers will be available on Mar 13 at 18:00.

Score for this quiz: 4 out of 5

Submitted Mar 12 at 0:42

This attempt took 49 minutes.

Incorrect

Question 1

0 / 0.5 pts

Which is the suitable measure to find average income of a group of persons?

Mode

Quartiles

Median

Mean

Question 2

0.5 / 0.5 pts

Suppose four letters are selected from word AMRITSAR. What is chance that all selected letters are different?

 7/2 2/7 11/70 15/70**Question 3**

0.5 / 0.5 pts

In a reputed school, the probability of boys playing baseball is 0.6 and the probability of boys playing baseball and foot ball is 0.24. what is the probability of those who play baseball also play football?

 40% 20% 30% 50%**Question 4**

0.5 / 0.5 pts

In a binomial distribution, if $n=15$, $p=0.25$ then the value of $P(X=5)$ is

0.1651 0.6865 0.1561 0.8516**Question 5**

0.5 / 0.5 pts

Jobs arrive at a facility at an average rate of 5 in an 8 hour shift. The arrival of the jobs follows Poisson distribution. The average service time of a job on the facility is 40 minutes. The service time follows exponential distribution. Idle time (in hours) at the facility per shift will be

 5/7 7/5 10/3 14/3

Incorrect

Question 6

0 / 0.5 pts

A fair and an unfair coin with $P(T)=3/4$ are tossed three times simultaneously . Let X be a random variable which denote the number of heads shown by fair coin and Y denotes the number of heads shown by unfair coin then $P(X=Y)$ is _____

 128/512 136/512

- 1/2
- None of these

Question 7

0.5 / 0.5 pts

If $X \sim N(3, 16)$ then $P(X < 5) =$

- 0.3085
- 0.3885
- 0.3805
- 0.3580

Question 8

0.5 / 0.5 pts

If the maximum error with probability 0.95 is 1.2 and the standard deviation of population is 10, then sample size is

- 267
- 262
- 264
- 260

Question 9

0.5 / 0.5 pts

An estimator is a random variable because it varies from:

- Population to sample
- Population to population
- Sample to population
- Sample to sample

Question 10**0.5 / 0.5 pts**

The point where the Null Hypothesis gets rejected is called as?

- Acceptance value
- Significant value
- Critical value
- Rejection value

Quiz Score: 4 out of 5

Quiz 3

Due Mar 12 at 23:59

Points 5

Questions 10

Available Mar 11 at 18:00 - Mar 12 at 23:59

Time Limit 60 Minutes

Instructions

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- Number of questions - 10
- Each question carries 0.5 M
- Time duration - 1 Hour
- Read the question properly and answer.

All the best!!!!

Attempt History

	Attempt	Time	Score
LATEST	<u>Attempt 1</u>	48 minutes	4.5 out of 5

① Correct answers will be available on Mar 13 at 18:00.

Score for this quiz: **4.5** out of 5

Submitted Mar 12 at 17:13

This attempt took 48 minutes.

Question 1 0.5 / 0.5 pts

The mean of ten numbers is 58 if one of the numbers is 40, what is the mean of other nine

120

88

15

60

Question 2

0.5 / 0.5 pts

A die is thrown twice. What is the probability that both numbers are even prime?

1/36

1/3

1/2

1/6

Question 3

0.5 / 0.5 pts

There are 3 red balls, 4 green balls, and 5 black balls in a basket. The probability of not getting the red balls is

5/12

3/4

1/4

1/3

Question 4

0.5 / 0.5 pts

For a Binomial distribution , $n=4$ also $P(X=2)=3P(X=3)$ then the value of p

1/5 1/3 1/7 1/2**Question 5**

0.5 / 0.5 pts

A book of 200 pages contains 200 misprinted. Estimate the probability that a given page contains at least 2 misprints

 0.3243 0.2642 0.29 0.423**Question 6**

0.5 / 0.5 pts

If X and Y are discrete random variables with the distribution

$$f(x,y) = \begin{cases} k(2x+y) & x = 1, 2 \text{ & } y = 1, 2 \\ 0 & \text{otherwise} \end{cases}$$

Then the marginal probability function of x is

 $\frac{4x+3}{18}$

$\frac{4x+3}{9}$

$\frac{x+3}{9}$

None of these

Question 7

0.5 / 0.5 pts

In a normal distribution, what is the proportion of the data that lies within 1 standard deviation of the mean?

About 99.7%

About 50%

About 95%

About 68%

Incorrect

Question 8

0 / 0.5 pts

Sampling means following a sequence of stages. Which ONE of the following stages should come before the others?

Examine the objective of the study

Define the people of interest.

Find suitable source for the population members

Proceed with the fieldwork.

Question 9**0.5 / 0.5 pts**

A survey is conducted on 1300 students in a school to find the proportion of students who are interested in taking a music course. The upper and lower limits are 0.746 and 0.582. Calculate the point estimate and margin of error.

0.364 and 0.382

0.664 and 0.082

0.264 and 0.482

0.464 and 0.282

Question 10**0.5 / 0.5 pts**

The type of test(one tailed or two tailed) is defined by an alternative hypothesis.

True

False

Quiz Score: 4.5 out of 5

Quiz 3

Due Mar 12 at 23:59 **Points 5** **Questions 10**

Available Mar 11 at 18:00 - Mar 12 at 23:59 **Time Limit** 60 Minutes

Instructions

Quiz 3 is scheduled from 11th March 2023, 6:00 pm to 12th March 2023, 11:59 pm.

- Number of questions - 10
- Each question carries 0.5 M
- Time duration - 1 Hour
- Read the question properly and answer.

All the best!!!!

Attempt History

	Attempt	Time	Score
LATEST	<u>Attempt 1</u>	60 minutes	4.5 out of 5

! Correct answers will be available on Mar 13 at 18:00.

Score for this quiz: **4.5 out of 5**

Submitted Mar 12 at 19:00

This attempt took 60 minutes.

Question 1	0.5 / 0.5 pts
Which one of the following variables is not categorical?	
<input type="radio"/> Choice on a test item (true or false)	
<input type="radio"/> Gender of person(male or female)	
<input checked="" type="radio"/> Age of a person	

- Marital status of a person(single, married, divorced, other)

Question 2**0.5 / 0.5 pts**

A box contains 10 identical balls. 6 of them are Green and 4 are Pink. Two balls are randomly selected without replacement from the box. What is the probability of getting two green balls?

1/3

6/10

5/9

5/10

Question 3**0.5 / 0.5 pts**

There are 3 red balls, 4 green balls, and 5 black balls in a basket. The probability of not getting the red balls is

5/12

3/4

1/3

1/4

Question 4**0.5 / 0.5 pts**

A binomial distribution may be approximated by a Poisson provided

- both n and p are small
- n is large and p is small
- both n and p are large
- n is small and p is large

Question 5

0.5 / 0.5 pts

Suppose that a book of 600 pages contains 40 printing mistakes. Assume that these errors are randomly distributed throughout the book and x , the number of errors per page has a Poisson distribution. What is the probability that 10 pages selected at random will be free of errors ?

- $\frac{1}{3}e^{-2}$
- $e^{-\frac{2}{3}}$
- $2e^{-\frac{1}{3}}$
- $\frac{1}{3}e^{-1}$

Incorrect

Question 6

0 / 0.5 pts

If X and Y are independent, the cumulative distribution function $F_{x,y}(x,y)$ is equal to

P(X≤x) - P(Y≤x)

$F_x(x).F_y(y)$

P(X≤x) +P(Y≤y)

$F_x(x)+F_y(y)$

Question 7

0.5 / 0.5 pts

A Normal distribution with mean $\mu=0$ and Standard deviation $\sigma =1$ is

Standard Normal distribution.

Regular Normal distribution

Ideal Normal distribution

Perfect Normal distribution

Question 8

0.5 / 0.5 pts

A randomly selected sample of 1,000 college students was asked whether they had ever used the drug Ecstasy. Sixteen percent (16% or 0.16) of the 1,000 students surveyed said they had. Which one of the following statements about the number 0.16 is correct?

- It is a margin of error.
- It is a population proportion.
- It is a randomly chosen number.
- It is a sample proportion.

Question 9**0.5 / 0.5 pts**

Find the 99% confidence interval estimate if the sample mean $\bar{X} = 0$, the sample size $n=121$ and $\sigma=11$.

- 1.888941 to 1.888941
- 1.133365 to 1.133365
- 2.575829 to 2.575829
- 4.722354 to 4.722354

Question 10**0.5 / 0.5 pts**

The rejection probability of Null Hypothesis when it is true is called as?

- None of these
- Level of margin
- Level of Confidence

Level of significance

Quiz Score: **4.5** out of 5

Quiz 3 Results for SHIBINKUMAR KRISHNA KUMAR

! Correct answers will be available on Mar 13 at 18:00.

Score for this quiz: 5 out of 5

Submitted Mar 12 at 18:11

This attempt took 24 minutes.

Question 1

0.5 / 0.5 pts

The shape of the distribution is symmetrical if

- Mean < Median
- Shape does not depend on mean and median
- Mean= Median
- Mean > Median

Question 2

0.5 / 0.5 pts

In a box, there are 5 orange, 8 mango, and 9 apples. If a fruit is picked up randomly, what is the probability that it is neither orange nor mango?

- 13/22
- 9/22
- 8/22
- 5/22

Question 3

0.5 / 0.5 pts

There are 3 red balls, 4 green balls, and 5 black balls in a basket. The probability of not getting the red balls is

 5/12 1/4 3/4 1/3**Question 4**

0.5 / 0.5 pts

Let X be a random variable that follows Binomial distribution with expectation $E(X) = 7$ and variance $V(X) = 6$. Then the probability of success p is

 6/7 36/49 1/7 1/49**Question 5**

0.5 / 0.5 pts

A computing system manager states that the rate of interruptions to the internet service is 0.2 per week. Find the probability of one interruption in 3 weeks using Poisson distribution.

0.3292

0.1637

0.5678

0.4235

Question 6

0.5 / 0.5 pts

For two random variables X and Y with joint PMF given in the table below, $P(X=0, Y \leq 1) = \underline{\hspace{2cm}}$

	Y=0	Y=1	Y=2
X=0	1/6	1/4	1/8
X=1	1/8	1/6	1/6

1/6

5/12

1/4

6/13

Question 7

0.5 / 0.5 pts

Let X be a normal random variable with mean zero and variance 9. If $a = P(X > 3)$, then $P(|X| \leq 3)$ equals:

1 - 2a

2a

1 - a

a

Question 8

0.5 / 0.5 pts

In which of the following types of sampling the information is carried out under the opinion of an expert?

quota sampling

purposive sampling

convenience sampling

judgement sampling

Question 9

0.5 / 0.5 pts

A single value used to estimate a population values is called:

Point estimate

- Degrees of freedom
- Interval estimate
- Level of confidence

Question 10

0.5 / 0.5 pts

A doctor claims that average age of his patients is less than 33. A random sample of 38 patients has an average age of 34. A test is conducted to test the claim. Given that the standard deviation is 8 and level of significance is 0.04. Identify whether the test is one tailed or two tailed.

- Since the null hypothesis less than type, the test is two tailed.
- Since the alternative hypothesis less than type, the test is two tailed.
- Since the alternative hypothesis less than type, the test is one tailed
- Since the null hypothesis less than type, the test is one tailed.

Quiz Score: 5 out of 5

Quiz 3

Due Mar 12 at 23:59

Points 5

Questions 10

Available Mar 11 at 18:00 - Mar 12 at 23:59

Time Limit 60 Minutes

Instructions

Quiz 3 is scheduled from 11th March 2023, 6:00 pm to 12th March 2023, 11:59 pm.

- Number of questions - 10
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- Time duration - 1 Hour
- Read the question properly and answer.

All the best!!!!

Attempt History

	Attempt	Time	Score
LATEST	<u>Attempt 1</u>	16 minutes	5 out of 5

! Correct answers will be available on Mar 13 at 18:00.

Score for this quiz: **5 out of 5**

Submitted Mar 12 at 19:28

This attempt took 16 minutes.

Question 1

0.5 / 0.5 pts

What is the median?

- Value separating higher half from lower half of a data sample
- Mean of the highest and lowest number in a data sample
- Difference between higher half and lower half of the data set

- Difference between the highest and lowest number

Question 2**0.5 / 0.5 pts**

A die is thrown once. What is the probability that the score is a factor of 12?

- 3/6

- 5/6

- 2/6

- 4/6

Question 3**0.5 / 0.5 pts**

25% of the children in a school have a dog. 60% have a cat and 15 % have a dog and a cat. What is the probability of those who have a dog also have a cat?

- 4/5

- 1/5

- 3/5

- 2/5

Question 4**0.5 / 0.5 pts**

If X follows a binomial distribution $B(n, 0.2)$. If $E(X) = 5$ then the sample size n is ----- and $V(X)$ is -----

- n = 25 and $V(X) = 5$
- n = 20 and $V(X) = 4$
- n = 15 and $V(X) = 4$
- n = 25 and $V(X) = 4$

Question 5

0.5 / 0.5 pts

Consider a Poisson distribution for the tossing of an unbiased coin. The mean of the distribution is μ . The standard deviation of for this distribution is given by

- μ
- μ^2
- $\sqrt{\mu}$
- $\frac{1}{\mu}$

Question 6

0.5 / 0.5 pts

The joint cumulative distribution function $F(x,y)$ lies with in the limits

- $-\infty$ and 0
- 1 and 0
- 0 and 1
- 1 and 1

Question 7

0.5 / 0.5 pts

For a standard normal variate, the value of mean is

- infinite
- None of these
- 0
- 1

Question 8

0.5 / 0.5 pts

If the size of the sample is 25 and maximum error with 95% confidence is 0.1, then the standard deviation of the sample is

- 2.12
- 0.255
- 2.55

0.025**Question 9****0.5 / 0.5 pts**

The difference between value of parameter of population and value of unbiased estimator point is classified as

 Marginal error Sampling error Population error Confidence error**Question 10****0.5 / 0.5 pts**

1. If we accept a Null hypothesis, when it is false then this is an error of type _____

 BOTH I Can't be determined II**Quiz Score: 5 out of 5**