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SASTRA » Numerical &amp; Statistical Analysis



## Unit 4 - UNIT - IV : Statistical distributions and Test of hypothesis

### Course outline

**UNIT - I :  
Transcendental  
Polynomial &  
Simultaneous  
equations and  
Interpolations ()**

**UNIT - II :  
Numerical  
differentiation and  
Integration ()**

**UNIT - III :  
Numerical  
Solutions of ODE  
()**

**UNIT - IV :  
Statistical  
distributions and  
Test of hypothesis  
()**

- ☐ Lesson 1: Binomial distribution (week 10) (unit? unit=51&lesson=52)
- ☐ Lecture 2: Poisson distribution(week 10) (unit? unit=51&lesson=53)
- ☐ Lecture 3: Normal distribution (week 10) (unit? unit=51&lesson=54)
- ☐ Lesson 4:Fitting the distribution to the data(week 10) (unit? unit=51&lesson=55)
- ☐ Lecture 5: Correlation (week 11) (unit? unit=51&lesson=56)
- ☐ Quiz: Assessment – 10 (assessment? name=68)
- ☐ Lecture 6: Rank correlation(week 11) (unit? unit=51&lesson=57)

## Assessment -- 10

The due date for submitting this assignment has passed.

Due on 2023-05-28, 23:59 IST.

As per our records you have not submitted this assignment.

1) The Scatter diagram method is referred as

1 point

- ☐ Karl pearson's method
- ☐ Spearman's method
- ☐ graphical method
- ☐ none of the above.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*graphical method*

2) The mean of the binomial distribution is

1 point

- ☐ pq
- ☐ npq
- ☐ nq
- ☐ np

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*np*

3) If the mean and variance of a binomial distribution are 12 and 4, then the distribution is

1 point

- ☐  $(1/3+2/3)^{18}$
- ☐  $(1/3+2/3)^{17}$
- ☐  $(1/3+2/3)^{16}$
- ☐  $(1/3+2/3)^{20}$

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
 *$(1/3+2/3)^{18}$*

4) If X is a poisson variable such that  $P(X=2)=9P(X=4)+90P(X=6)$ , then the median is \_\_\_\_\_

1 point

- ☐ 0
- ☐ 2
- ☐ 1
- ☐ 3

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*1*

5) In a binomial distribution, the relation between p and q is

1 point

- ☐  $p > q$
- ☐  $p < q$
- ☐  $q=1-p$
- ☐ above all.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
 *$q=1-p$*

6) Find the area to the left of  $Z = 1.90$

1 point

- ☐ Lecture 7: Multiple correlation (week 11) (unit? unit=51&lesson=58)
- ☐ Lecture 8: Regression Equations (week 11) (unit? unit=51&lesson=59)
- ☐ Lecture 9: Regression Equations (week 11) (unit? unit=51&lesson=60)
- ☐ Quiz: Assessment – 11 (assessment? name=70)
- ☐ Lecture 10: Small samples - t-test (week 12) (unit? unit=51&lesson=61)
- ☐ Lecture 11: t-test (contd..) (week 12) (unit? unit=51&lesson=62)
- ☐ Lecture 12: F- test (week 12) (unit? unit=51&lesson=63)
- ☐ Lecture 13: Chi-square test (week 12) (unit? unit=51&lesson=64)
- ☐ Lecture 14: Chi-square test (contd..) (week 12) (unit? unit=51&lesson=65)
- ☐ Quiz: Assessment – 12 (assessment? name=72)
- ☐ Lecture 15: Large Sample - Z-test (week 13) (unit? unit=51&lesson=66)
- ☐ Lecture 16: z-test (contd..) (week 13) (unit? unit=51&lesson=67)

**Unit V : Non-parametric statistical methods & Time series analysis ()**

- ☐ no left
- ☐ 0.5
- ☐ 0.4713
- ☐ no idea

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*0.4713*

7) find the area to the right of  $Z = 0.25$

**1 point**

- ☐ no idea
- ☐ 0.5
- ☐ 0.4013
- ☐ 0.25

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*0.4013*

8) A type of beam has a mean breaking strength of 1500 kgs and standard deviation 100 kgs. Find the relative frequency of all such beams whose breaking strength lie between 1450 and 1600 kgs. **1 point**

- ☐ 0.3413
- ☐ 0.1915
- ☐ 0.5328
- ☐ insufficient data

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*0.5328*

9) In a Poisson distribution \_\_\_\_\_

**1 point**

- ☐ Median=Mode
- ☐ Mean > Mode
- ☐ Mean<Mode
- ☐ Mean=variance

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*Mean=variance*

10) In the textile industry, a manufacturer is interested in the number of failures or flaws occurring in each 100 feet of material. The probability distribution that has the greatest chance of applying to this situation is the **1 point**

- ☐ normal distribution
- ☐ binomial distribution
- ☐ Poisson distribution
- ☐ uniform distribution

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*Poisson distribution*

11) If  $X$  is a binomial variate with  $p=1/5$  for the experiment of 50 trials then the standard deviation is \_\_\_\_\_.

**1 point**

- ☐ square root 2
- ☐ 1/5
- ☐ 10
- ☐ 2

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*square root 2*

12) Given  $X=B(n,p)$ , the condition under which  $X$  tends to poisson distribution are \_\_\_\_\_.

**1 point**

- ☐  $n$  tends to infinity and  $p$  tends to zero
- ☐  $n$  tends to infinity and  $q$  tends to zero
- ☐  $n$  tends to infinity,  $p$  tends to zero and  $np$  is fixed
- ☐  $n$  tends to infinity and  $p$  tends to  $q$ .

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
 *$n$  tends to infinity,  $p$  tends to zero and  $np$  is fixed*

13) 10 coins are tossed 100 times. How many times would you expect 7 coins to fall head upward in binomial distribution?

**1 point**

- ☐ 12

- ☐ 10  
☐ 13  
☐ nothing

No, the answer is incorrect.

Score: 0

Accepted Answers:

12

14) using the formula of binomial distribution find the probability of rolling at most 2 sixes in 5 rolls of a dice.

**1 point**

- ☐ 1/6  
☐ 5/6  
☐ 625/648  
☐ 1/6

No, the answer is incorrect.

Score: 0

Accepted Answers:

625/648

15) The mortality rate for corona disease is 7 in 1000. what is the probability for just 2 deaths on account of this disease in a group of 400? **1 point**

- ☐ 23.52%  
☐ 2%  
☐ 8%  
☐ 50%

No, the answer is incorrect.

Score: 0

Accepted Answers:

23.52%



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