

MIDTERM EXAMINATION

Spring 2009

STA301- Statistics and Probability (Session - 6)

Time: 60 min

Marks: 38

Question No: 1 (Marks: 1) - Please choose one

For a positively skewed distribution m_3 will be:

▶ Positive

▶ Negative

▶ Zero

▶ 1

Question No: 2 (Marks: 1) - Please choose one

When data is labeled to identify an attribute of element, the measurement scale is:

▶ Ordinal

▶ Interval

▶ Nominal

▶ Ratio

Question No: 3 (Marks: 1) - Please choose one

Suppose the estimated equation is _____ has been calculated for a set of data. What is slope of the line:

▶ 0

▶ 2

▶ -2

▶ 5

Question No: 4 (Marks: 1) - Please choose one

If $P(B|A) = 0.25$ and _____, then $P(A)$ is:

▶ 0.05

▶ 0.80

▶ 0.95

▶ 0.75

Question No: 5 (Marks: 1) - Please choose one

Which branch of statistics deals with the techniques that are used to organize, summarize, and present the data:

▶ Advance statistics

- ▶ Probability statistics
- ▶ Descriptive statistics
- ▶ Inferential statistics

Question No: 6 (Marks: 1) - Please choose one

In a sample of 800 students in a university, 160, or 20%, are Business majors. Based on the above information, the school's paper reported that "20% of all the students at the university are Business majors." This report is an example of :

- ▶ A sample
- ▶ A population
- ▶ Statistical inference
- ▶ Descriptive statistics

Question No: 7 (Marks: 1) - Please choose one

A set that contains all possible outcomes of a system is known as

- ▶ Finite Set
- ▶ Infinite Set
- ▶ Universal Set
- ▶ No of these

Question No: 8 (Marks: 1) - Please choose one

If X and Y are independent, then $\text{Var}(X-Y)$ is equal to:

- ▶
- ▶
- ▶
- ▶ Zero

Question No: 9 (Marks: 1) - Please choose one

Which of the following is the class frequency

- ▶ The number of observations in each class
- ▶ The difference between consecutive lower class limits
- ▶ Always contains at least 5 observations
- ▶ Usually a multiple of the lower limit of the first class

Question No: 10 (Marks: 1) - Please choose one

How to construct the class interval:

- ▶ Divide the class frequencies in half
- ▶ Divide the class frequency by the number of observations
- ▶ Find the difference between consecutive lower class limits
- ▶ Count the number of observations in the class

Question No: 11 (Marks: 1) - Please choose one

Data in the Population Census Report is:

▶ Ungrouped data

▶ Secondary data

▶ Primary data

▶ Arrayed data

Question No: 12 (Marks: 1) - Please choose one

What is the range of -2,-3,-5,-10 :

▶ -12

▶ 8

▶ -8

▶ 2

Question No: 13 (Marks: 1) - Please choose one

The algebraic sum of deviations from mean is:

▶ Maximum

▶ Minimum

▶ Zero

▶ Undefined

Question No: 14 (Marks: 1) - Please choose one

The sum of squares of deviations from mean is:

▶ Undefined

▶ Zero

▶ Maximum

▶ Minimum

Question No: 15 (Marks: 1) - Please choose one

Statistic is a numerical quantity, which is calculated from:

▶ Population

▶ Sample

▶ Data

▶ Observations

Question No: 16 (Marks: 1) - Please choose one

Which of the following is not based on all the observations?

- ▶ Arithmetic Mean
- ▶ Geometric Mean
- ▶ Harmonic mean
- ▶ Mode

Question No: 17 (Marks: 1)

Elaborate the word dispersion.

We can say that the degree of scatter of data, usually about an average value, can be the median.

Question No: 18 (Marks: 1)

Define population.

We can define population is the collection of individuals or objects having some common measurable characteristics.

Question No: 19 (Marks: 2)

What does mean by the independence of two events:

We can define independence of two events are statistically independent if the probability of their occurring jointly equals the product of their respective probabilities. Independence of two events also know as stochastic independence.

Question No: 20 (Marks: 3)

The reciprocal of the values are

0.012, 0.0235, 0.0135

Calculate Harmonic Mean

Harmonic mean is 250.037

Question No: 21 (Marks: 5)

The probability that a student passes mathematics is $\frac{2}{3}$ and the probability that he passes English is $\frac{4}{9}$. If the probability of passing at least one course is $\frac{4}{5}$, what is the probability that he will pass both courses?

Math= $\frac{2}{3}$

English= $\frac{4}{9}$

Least one passing probability= $\frac{4}{5}$

Math + English = $\frac{2}{3} + \frac{4}{9}$

=1.11

$\frac{4}{5} + 1.11$

=1.911

Question No: 22 (Marks: 10)

A pair of dice is thrown, then

1) Find the sample space for this experiment

Suppose if A and B is the pair of dice then lets try to find out how many result we can find

- A hit first
- B Hit first
- B hit Second
- A Hit Second
- Both Hit Equally
- Both didn't Hit

2) Determine the probability of getting the sum 8 on the dice

3) Find the probability of getting sum 7 or 11