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MIDTERM EXAMINATION
Spring 2010
STA301- Statistics and Probability (Session - 4)

Ref No: 1514379
Time: 60 min
Marks: 40

Student Info	
StudentID:	MC090407150
Center:	OPKST
ExamDate:	5/30/2010 12:00:00 AM

For Teacher's Use Only

Q No.	1	2	3	4	5	6	7	8	Total
Marks									
Q No.	9	10	11	12	13	14	15	16	
Marks									
Q No.	17	18	19	20	21	22	23	24	
Marks									
Q No.	25	26							
Marks									

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

10! =.....

► 362880

*► 3628800

► 362280

► 362800

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

If a player well shuffles the pack of 52 playing card, then the probability of a black card from 52 playing cards is: http://vustudents.ning.com

► $\frac{1}{52}$

*► $\frac{13}{52}$

► $\frac{4}{52}$

► $\frac{26}{52}$

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

The probability of drawing a 'jack card ' from 52 playing cards is:

► $\frac{1}{52}$

*► $\frac{4}{52}$

► $\frac{13}{52}$

► $\frac{26}{52}$

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

Which dispersion is used to compare variation of two series:

► C.V.

*► Q.D.

► M.D.

► S.D.

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

If all the values fall on the same straight line and the line has a positive slope then what will be the value of the correlation coefficient 'r': http://vustudents.ning.com

► $0 \leq r \leq 1$

► $r \geq 0$

*► $r = +1$

► r=-1

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

In a regression line Y= a + bX, the value of the correlation coefficient will be zero if:

*► Intercept a = 0

► Intercept $a \neq 0$

► Slope b = 0

► Slope $b \neq 0$

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

When two coins are tossed the probability of at least one head is:

► 1/4

* ► 3/4

► 2/4

► 4/4

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

Which one of the following measurement does *not* divide a set of observations into equal parts?

► quartiles

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► deciles
► percentiles
*► standard deviations

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

In the model Y = mX + a, Y is also known as the:

► Predictor variable
► Independent variable
► Predicted variable
► Explanatory variable

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

According to empirical rule approximately 95% of the measurements will fall under which interval? http://vustudents.ning.com

► $\bar{X} \pm S$
*► $\bar{X} \pm 2S$
► $\bar{X} \pm 3S$
► $\bar{X} \pm 4S$

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

Which one of the following is written at the top of the table?

► Source note
► Foot note
► Prefatory note
*► Title

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

If a curve has a longer tail to the right, it is called :

*► Positively skewed
► Negatively skewed
► J-shaped

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► Symmetric

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

Which one 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: 14 (Marks: 1) - Please choose one

If X is a discrete random variable, then the function $f(x)$ is

► A probability function
► A probability density function
► A density function
*► A distribution function

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

Which one of the following graphs is used for a time series data?

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*► Histogram

► Historigram
► Frequency curve

► Frequency polygon

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

If you connect the mid-points of rectangles in a histogram by a series of lines that also touches the x-axis from both ends, what will you get?

► Ogive
► Frequency polygon
*► Frequency curve
► Historigram

Question No: 17 (Marks: 1) - Please choose one

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If mean of the two observations is 10.5, then median of these two observations will be:

► 7.5
► 8.5
► 9.5
*► 10.5

Question No: 18 (Marks: 1) - Please choose one

Which one is the formula of mid range:

► $x_m - x_0$

► $x_0 - x_m$

► $\frac{x_0 - x_m}{2}$

*► $\frac{x_0 + x_m}{2}$

Question No: 19 (Marks: 1) - Please choose one

Which one of the following is not included in measures of central tendency:

*► Quartile deviation

► Harmonic mean

► Geometric mean

► Arithmetic mean

Question No: 20 (Marks: 1) - Please choose one

For the given data 2, 3, 7, 0, -8 G. M will be:

► Negative
► Positive
► Zero
* ► Undefined

Question No: 21 (Marks: 2)

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Why measure of central tendency and measure of dispersion are complementary to each other?

Question No: 22 (Marks: 2)

What do you know about discrete random variable?

Ans:

Such a numerical quantity whose value is determined by the value of a random experiment is called a random variable.

Example:

If we toss three dice together and let X represents the number of heads, then the random variable X consists of the value 0, 1, 2, and 3. the X in this example is a discrete random variable.

Question No: 23 (Marks: 3)

What is the subjective approach to the probability?

Ans:

Subjective probability is a measure of the strength of a person's belief regarding the occurrence of an event A. Probability in this sense is purely subjective and is based on whatever evidence is available to the individual.

It has a disadvantage that 2 or more persons faced with the same evidence may arrive at different probabilities.

Example:

Suppose a panel of three judges is hearing a trial. It is possible that based on the evidence that is presented, two of them arrive at the conclusion that the accused is guilty while one of them decides that the evidence is not strong to draw this conclusion.

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Question No: 24 (Marks: 3)

Explain the difference between absolute dispersion and relative dispersion:

Ans:

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Question No: 25 (Marks: 5)

Differentiate between the mutually exclusive events and exhaustive events.

Mutually Exclusive Events
Two events A and B of a single experiment are said to be mutually exclusive if and only if they cant both occur at the same time.

Example:

When a die is rolled, the events ‘even number’ and odd number are mutually exclusive as we can get eithere an even number or an odd number in one throw, not both at the same time.

Exhaustive Events:

Events are said to be collectively exhaustive, when the union of mutually exclusive events is equal to the entire sample space S.

Examples

In the coin tossing experiment, head and tail are collectively exhaustive events.

Question No: 26 (Marks: 5)

Find the first two moments about mean from the following data.
X= 34, 70, 42, 54, 40, 68, 56, 38, 36, 72

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