SOLVED BY CHANDA REHMAN
FINALTERM EXAMINATION
Fall 2009
MTH302- Business Mathematics & Statistics (Session - 2)

Ref No:
Time: 120 min
Marks: 80

Question No: 1   (Marks: 1)   - Please choose one
Scatterplots are used only for

► quantitative variables
► **mulivariables**

► surplus varible

► None of these

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

If the CORRELATION function returns the #DIV/0 ! error value, what is the possible reason of the error?

► Array1 and Array2 have different number of data points.
► **Either Array1 or array2 is empty**.
► Array or reference argument contains text, logical values or empty cells.
► The arguments are names, arrays, or references that contain numbers.

Question No: 3   (Marks: 1)   - Please choose one
A college has 10 basketball players. A 5-member team and a captain will be selected out of these 10 players. How many different selections can be made?
► **1260**
► 210
► 10C6 * 6!
► 10C5 * 6
  http://www.onestopmba.com/cat-tips/materials/maths/algebra/permutation/answer-one.asp

Question No: 4   (Marks: 1)   - Please choose one
An insurance company wants to predict sales from the amount of money they spend on advertising. Which would be the independent variable?

► (i) sales
► **(ii) advertising**

► (iii) insufficient information to decide
► (iv) Both (i) and (ii) are correct.

Question No: 5   (Marks: 1)   - Please choose one
 Which of the following graphs is a visual presentation using horizontal or vertical bars to make comparisons or to show relationships on items of similar makeup?

► **bar graph**
► pie graph
► pictograph
► line graph

Question No: 6   (Marks: 1)   - Please choose one
 In a positively skewed distribution

► The mean, median, and mode are all equal.

► **The mean is larger than the median**
► The median is larger than the mean.

► The standard deviation must be larger than the mean or the median.

Question No: 7   (Marks: 1)   - Please choose one
 Which one of the following is **not** a component of the multiplicative time series model?
► trend
► irregular variation
► **regression trend**
► seasonality

► cyclicity

Question No: 8   (Marks: 1)   - Please choose one
 How many number of times will the digit '7' be written when listing the integers from 1 to 1000?
► 271
► **300**
► 252
► 304

Question No: 9   (Marks: 1)   - Please choose one
 How many arrangements can be made of the letter BUSINESS

► 6723
► 6725
► **6720**

► 6721

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

The moving averages represent ------------------

► **Time series variations**
► Co-efficient of variations
► Statistical Dispersion
► Absolute deviation

Question No: 11 (Marks: 1) - Please choose one
The class frequency is
► **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: 12 (Marks: 1) - Please choose one
Twelve randomly-chosen students were asked how many times they had missed class during a certain semester, with this result: 2, 1, 5, 1, 1, 3, 4, 3, 1, 1, 5, 18. For this sample, the standard deviation is approximately

► **4.75**

► 4.55
► 3.03
► 3.75

Question No: 13 (Marks: 1) - Please choose one
The experimental region is the range of the previously observed values of the dependent variable.

► **False**
► True

Question No: 14 (Marks: 1) - Please choose one
Which of the following is **not** a violation of the independence assumption?
► Negative autocorrelation
► A pattern of cyclical error terms over time
► Positive autocorrelation
► A pattern of alternating error terms overtime
► **A random pattern of error terms over time**

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

All of the following are assumptions of the error terms in the simple linear regression model except

► normality.
► error terms with a mean of zero.
► constant variance.
► **variance of one.**

Question No: 16   (Marks: 1)   - Please choose one
If the regression equation is equal to 23.6 - 54.2X, then 23.6 is the _____ while -54.2 is the _____ of the regression line.
► slope, intercept
► **intercept, slope**
► slope, regression coefficient
► radius, intercept

Question No: 17   (Marks: 1)   - Please choose one
If mean scores of midterm and final term of a student is 78% and 80%. Also variances are 106 and 77 then
► **Midterm has greater variation in marks than Final term**
► Final term has greater variation in marks than Midterm
► No variation in midterm and final term marks
► None of the above.

Question No: 18   (Marks: 1)   - Please choose one
If A and B are two mutually exclusive events, then

► P(AUB) = P(A).P(B)
► P(A^B) = P(A)+P(B)
► **P(AUB) = P(A)+P(B)**
► P(AUBUC) = P(A).P(B)

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

The equation for the correlation coefficient is   where

►
►
►
►

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

After the merchant buys merchandise, it is sold at a higher price called the _____

► Sale price

► Revenue discount

► **Selling price**
► Cost price

Question No: 21   (Marks: 1)   - Please choose one
A reduction of the amount due on an invoice is called a _____ .
► Trade discount
► **Net discount**

► Cash discount

► Unearned discount

Question No: 22   (Marks: 1)   - Please choose one
If the basic salary of an employee is 13000 what is the amount of allowances he is getting for his conveyance?

► **325**
► 260
► 765
► 500

Question No: 23   (Marks: 1)   - Please choose one
The minimum value of the correlation coefficient r can be

► -infinity
► **0**
► -1
► 1

Question No: 24   (Marks: 1)   - Please choose one
Total Provident Fund added to the employee's fund is ------------------ of the basic salary.
► 1 / 11 th
► **2 / 11 th**
► 9.09 %
► 9.99%

Question No: 25   (Marks: 1)   - Please choose one
If I is an identity matrix then it must also be a

► rectangular matrix
► row matrix

► column matrix
► **scalar matrix**

Question No: 26　(Marks: 1)　- Please choose one

If an asset is purchased at Rs 3000 on the date 6/29/2008 and the first depreication period ends on 11/29/2008, where salvage value is 300 and period is taken as 1 on 20% interest rate where basis =1, then which of the following function Returns the depreciation for given accounting period

► =AMORLINC(3000, 6/29/2008, 11/29/2008, 300, 1*12, 20%, 1)
► =AMORLINC(3000, 6/29/2008, 11/29/2008, 300, 1, 20% / 12 , 1)
► **=AMORLINC(3000, 6/29/2008, 11/29/2008, 300, 1, 20%, 1)**
► =AMORLINC(3000, 6/29/2008, 11/29/2008, 300, 1*12 , 20%/12, 1)
► None of these

Question No: 27　(Marks: 1)　- Please choose one

If   is the matrix of dimension   and   is the identity matrix of dimension   .
Then which of the following is true

► $AI = I$

► **$AI = A$**
► $A + I = A$

► $A + I = I$

Question No: 28　(Marks: 1)　- Please choose one

If the cost & selling price of a pen are Rs.12 & Rs.15 respectively, profit percentage is:

► 33.33%

► **25%**

► 20%

► 10%

Question No: 29 (Marks: 1) - Please choose one

The net price of a computer table is 2500 and list price 3000. The trade discount will be
_ 13%
_ **17%**
_ 21%
_ 25%--

Question No: 30 (Marks: 1) - Please choose one

Ogives at different values determine
_ limits .
_ frequencies.
_ cumulative frequencies.
_ both (2) & (3).

Question No: 31 (Marks: 1) - Please choose one
While using Frequency function ,one always selects
_ one cell more than data array.
_ **one cell more than bins array .**
_ at most 20 cells.
_ random number of cells

Question No: 32 (Marks: 1) - Please choose one
If an operation A can be performed in m ways and B in n ways, then the two operations
can be performed together in ------ways.
_ m+n
_ m-n
_ **m*n**
_ n/m

Question No: 33 (Marks: 1) - Please choose one
The variance of the 3,3,3,3,3 is
_ **Zero .**
_ One.
_ Twice the standard standard deviation.
_ Half of the range

Question No: 34 (Marks: 1) - Please choose one
Which of the following is most probably is an example of impossible event while tossing
of a coin
_ Coming of head
_ Coming of tail
_ **Coming of erected coin**
_ None of these

Question No: 35 (Marks: 1) - Please choose one
For two tail test, when
$\alpha = 0.10$
the value of Z is
_ ± 1.96
_ **± 1.645**
_ ± 2.326
_ ± 2.575

Question No: 36 (Marks: 1) - Please choose one

For the set of data 1, 2, 3, 4, 5, 2, 1, 6, 8, the mode is given by

_ 1
_ 2
_ **1 and 2**
_ 3

Question No: 37 (Marks: 1) - Please choose one

Time series data is analyzed by the moving average.

_ **True**
_ False

Question No: 38 (Marks: 1) - Please choose one

Linear trend is calculated as $Yt = 30.5 + 0.55t$. The trend projection for period 15 is

_ 11.25
_ 28.50
_ **38.75**
_ 44.25

Question No: 39 (Marks: 1) - Please choose one

………..is a deduction from the list price of goods provided by a business in return for payment within a specified time.

_ **trade discount**
_ cash discount
_ credit discount
_ none of these

Question No: 40 (Marks: 1) - Please choose one

Ogive of a statistical data can be drawn by

_ **a) using the cumulative frequency of the distribution**
_ b) frequency of the distribution
_ c) both (a) & (b)
_ d) None of these.

Question No: 41 (Marks: 2)

Find harmonic mean (HM) of 10,12,14,17

Question No: 42 (Marks: 2)

If you toss a die and observe the number of dots that appears on top face then write the events that the even number occurs.

Solution:
Number of Possible outcomes = 6
Number of Events = 3
P= Number of events/Number of all Possible outcomes.
P= 3/6

Question No: 43 (Marks: 2)

Define Cumulative Poisson distribution.

Solution:

Question No: 44 (Marks: 3)
Four friends take an IQ test. Their scores are 96, 100, 106, 114. Which of the following
statements is true? Give reason.
I. The mean is 103.
II. The mean is 104.
III. The median is 100.
IV. The median is 106.
(A) I only
(B) II only
(C) III only
(D) IV only
(E) None is true
Solution:
The correct answer is (B). The mean score is computed from the equation:
Mean score = _x / n = (96 + 100 + 106 + 114) / 4 = 104
Since there are an even number of scores (4 scores), the median is the average of the two
middle scores. Thus, the median is (100 + 106) / 2 = 103

Question No: 45 (Marks: 3)
What is the probability that a bag filled by the machine weighs less
than 515 g?
z = (515 - 510)/2.5 = 2.0
(Use the table given below)