

## Quantitative Methods for Business

END TERM EXAM – November, 2019

Date 21/11/201

Time: 3 hours  
50

Maximum Marks:

Candidate should read carefully the instructions printed on the question paper and on cover of the answer book, which is provided for their use.

- a) Attempt any five questions
- b) Calculator is allowed
- c) Graph paper is provided

1.

- a. For the following data find mean, median and mode (5)

1, 8, 10, 6, 4, 8, 4, 12, 11, 1, 5, 7

- b. Find standard deviation of following data (5)

Class	1-10	11-20	21-30	31-40	40-50
Frequency	3	15	40	28	14

2. a. The following table gives profit in lakhs of selected companies. Draw the less than frequency Ogive Curve for the following data: (6)

Profits	No of Companies
0-20	8
20-40	15
40-60	36
60-80	22
80-100	12
100-120	7
120-140	6

- b. Give some examples of use of statistics by Government. (4)

3. a. A departmental store keeps the record of his customers and their chance of buying any

product when they enter the store. From the past records it has been observed that the probability that the customer who just enters will buy something is 0.4. During a pre-lunch session, 5 customers enter, (5)

- i. What is the probability that no customer will buy any product.
- ii. What is the probability that exactly two customers will buy some products
- iii. What is the probability that at most 4 customers will buy a product.

- b. The average daily sale of a large chain of white goods is 150 lacs, with Standard deviation of 15 lacs. Assuming the distribution is normal,

- i. What is the probability that the daily sales will lie between 120 lacs and 165 lacs on a particular day??

ii. What is the probability that the sales will exceed 180 lacs on a particular day?

Probability of  $(-\infty < z < -2) = 0.0228$

Probability of  $(-\infty < z < -1) = 0.8413$

Probability of  $(-\infty < z < 2) = 0.9772$

(5)

4.

- a. A national study by Harris Interactive, Inc., evaluated the top technology companies and their reputations. The following shows how 10 technology companies ranked in reputation and how the companies ranked in percentage of respondents who said they would purchase the company's stock. A positive rank correlation is anticipated because it seems reasonable to expect that a company with a higher reputation would have the more desirable stock to purchase.

(5)

Company	Reputation	Stock Purchase
Microsoft	1	3
Intel	2	4
Dell	3	1
Lucent	4	2
Texas Instruments	5	9
Cisco Systems	6	5
Hewlett-Packard	7	10
IBM	8	6
Motorola	9	7
Yahoo	10	8

Compute the rank correlation between reputation and stock purchase.

- b. A department of transportation's study on driving speed and miles per gallon for midsize automobiles resulted in the following data: (5)

<b>Speed (Miles per Hour)</b>	30	50	40	55	30	25	60	25	50	55
<b>Miles per Gallon</b>	28	25	25	23	30	32	21	35	26	25

Compute and interpret the Pearson's (r) correlation coefficient.

5. The following data represent the number of people per day buying bread packs and butter packs at retail outlet. Find a linear regression equation between Y & X.

No of people buying Butter Packs Y	No of people buying bread packs X
145	147
136	148
119	137
127	118
125	127

<b>121</b>	<b>124</b>
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Also find the number of people buying butter packs when 140 of them buy bread packs. (10)

6.

- a. A training was taken by students and the performance in two subjects. The teacher ranked his students according to their academic achievement. The order of achievement is given below. Calculate Spearman's rank correlation coefficient (6)

<b>X:</b>	<b>48</b>	<b>33</b>	<b>40</b>	<b>9</b>	<b>16</b>	<b>16</b>	<b>65</b>	<b>24</b>	<b>16</b>	<b>57</b>
<b>Y:</b>	<b>13</b>	<b>13</b>	<b>24</b>	<b>6</b>	<b>15</b>	<b>4</b>	<b>20</b>	<b>9</b>	<b>6</b>	<b>19</b>

- b. What are the assumptions / conditions of Binomial Experiment? (4)

***BEST OF LUCK***