III Semester B.Com. Examination, November/December 2017
(Semester Scheme) (2015-16 and Onwards) (CBCS) (F + R)

COMMERCe

3.6 : Quantitative Analysis for Business Decisions – II

Time : 3 Hours
Max. Marks : 70

Instructions : Answers should be written completely either in English or in Kannada.

SECTION – A

1. Answer any five sub-questions. Each sub-question carries two marks. (5x2=10)

a) What do you mean by correlation?

b) If bxy = –0.36, byx = –1.38, obtain 'r'.
   bxy = –0.36, byx = –1.38, ಅದು 'r'ಗಿನ್ನು ಗಳು.

c) Write the meaning of irregular variations.

 d) Expand \((y - 1)^6 = 0\).

 e) What is meant by multi-stage sampling?

 f) Mention methods of sampling.

 g) What is probability?

P.T.O.
SECTION - B

Answer any three questions from the following. Each question carries six marks. (3x6=18)

2. Ranks given in a music contest assigned by two judges are given below:

<table>
<thead>
<tr>
<th>Judge A</th>
<th>4</th>
<th>5</th>
<th>8</th>
<th>6</th>
<th>7</th>
<th>3</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Judge B</td>
<td>7</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>8</td>
</tr>
</tbody>
</table>

Calculate rank correlation.

3. Calculate the two regression equations from the following data:
\[ \bar{X} = 20, \bar{Y} = 12, \sigma_x = 5, \sigma_y = 25, r = 0.8. \]

4. Estimate the population of India for the year 2021 using Binomial expansion method from the following data:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Population (in crores)</td>
<td>43.9</td>
<td>54.8</td>
<td>68.4</td>
<td>89</td>
<td>100</td>
<td>111</td>
</tr>
</tbody>
</table>

2021 ಚಿತ್ರೀಕರಣ ಹೊರತುಪಡಿಸಲು ಹಾಗೆ ಶಾಖೆ ಉಪಯೋಗಿಸಿ ಹೊರತುಪಡಿಸಲು ಫಲಿತಾಂಶದ ವಿದ್ಯುನ್ನು ಹೊರತುಪಡಿಸಲು.
5. A man wants to check the inventory records against the physical inventories by a sample survey, permitted deviation is ± 5 and standard deviation is 39.4. Find the sample size, if the confidence level is 90% (Value of confidence co-efficient 90% = 1.64).

6. Two unbiased dice are thrown. Find the probability that
   a) both the dice show the same digits
   b) the first die shows 5.

   SECTION – C

Answer any three questions from the following. Each question carries fourteen marks. (3×14 = 42)

7. Compute Pearson's correlation co-efficient for the following data and also calculate the probable error.

<table>
<thead>
<tr>
<th>Supply (quintals)</th>
<th>30</th>
<th>29</th>
<th>29</th>
<th>25</th>
<th>24</th>
<th>24</th>
<th>24</th>
<th>21</th>
<th>18</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price (₹)</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>15</td>
<td>17</td>
<td>18</td>
<td>20</td>
</tr>
</tbody>
</table>

Note: The table for Supply and Price is repeated for the second set of data as follows:

<table>
<thead>
<tr>
<th>Demand (‘000 units)</th>
<th>30</th>
<th>29</th>
<th>29</th>
<th>25</th>
<th>24</th>
<th>24</th>
<th>24</th>
<th>21</th>
<th>18</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price (₹)</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>15</td>
<td>17</td>
<td>18</td>
<td>20</td>
</tr>
</tbody>
</table>
8. Calculate trend values by the method of least-squares from the data given below:
   Sales (Rs. lakhs): 76 80 130 144 138 120 174 190

Plot the values on a graph. Also estimate the sales for 2017.

9. The heights (in inches) of a group of fathers and sons are given below:
   Height of fathers: 71 68 66 67 70 71 70 73 72 65 66
   Height of sons: 69 64 65 63 65 62 65 64 66 69 62

Find the lines of regression and estimate the height of son when the height of father is 69 inches.

10. Below are the data relating to wages earned by workers per day in a certain factory. Calculate the number of workers earning more than ₹ 75 per day by applying Newton's method.

   Daily wages (₹) upto: 50 60 70 80 90 100
   Number of workers: 50 150 300 500 700 800

11. Estimate the production for the years 2013 and 2015 with the help of the following data:

   Production (in '000 tonnes): 200 220 260 ? 350 ? 430
   Eggs ('000 tonnes): 200 220 260 ? 350 ? 430