

**PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)**

**BCom DEGREE EXAMINATION MAY 2026  
(Second Semester)**

Branch – **COMMERCE(BUSINESS PROCESS SERVICES)**

**STATISTICS FOR BUSINESS PROCESS**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQUAL** marks

(10 × 1 = 10)

| Module No. | Question No. | Question                                                                                                                                                                                                                                                            | K Level | CO  |
|------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----|
| 1          | 1            | A company collecting sales data directly from customers through survey is using<br>(i) Primary Data (ii) Secondary Data<br>(iii) Historical Data (iv) Processed Data                                                                                                | K1      | CO1 |
|            | 2            | Which diagram is most suitable to show percentage share of sales of different products in a company?<br>(i) Histogram (ii) Pie diagram<br>(iii) Frequency Polygon (iv) O-give                                                                                       | K2      | CO1 |
| 2          | 3            | In a business dataset, if extreme values (outliers) are present, which measure of central tendency is most appropriate?<br>(i) Mean (ii) Median (iii) Mode (iv) Harmonic Mean                                                                                       | K1      | CO2 |
|            | 4            | Which measure of dispersion considers all observations in a data set?<br>(i) Range (ii) Quartile Deviation<br>(iii) Mean Deviation (iv) Standard Deviation                                                                                                          | K2      | CO2 |
| 3          | 5            | In business, correlation between advertising expenditure and sales is usually<br>(i) Positive (ii) Negative<br>(iii) Perfect positive (iv) Perfect Negative                                                                                                         | K1      | CO3 |
|            | 6            | If $X=10$ , $a=5$ , and $b=2$ , the predicted value of Y is<br>(i) 15 (ii) 20 (iii) 25 (iv) 30                                                                                                                                                                      | K2      | CO3 |
| 4          | 7            | In a company meeting, the probability that a manager attends is 0.6 and the probability that an accountant attends is 0.5. If both attend together with probability 0.3, the probability of manager or accountant attends is<br>(i) 0.7 (ii) 0.8 (iii) 0.9 (iv) 0.1 | K1      | CO4 |
|            | 8            | In a firm, the probability that an employee is trained is 0.70 and the probability that an employee is trained and promoted is 0.35, the probability of (promoted given trained) is<br>(i) 0.20 (ii) 0.50 (iii) 0.35 (iv) 0.70                                      | K2      | CO4 |
| 5          | 9            | Which Excel functions are used to calculate range?<br>(i) SUM and AVERAGE (ii) MIN and MAX<br>(iii) MODE and MEDIAN (iv) VAR and STDEV                                                                                                                              | K1      | CO5 |
|            | 10           | If CORREL value = 0.95 between marketing cost and sales revenue, it indicates<br>(i) Strong positive relationship (ii) Weak relationship<br>(iii) Negative relationship (iv) Strong negative relationship                                                           | K2      | CO5 |

**SECTION - B (35 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQUAL** Marks

(5 × 7 = 35)

| ALL questions carry EQUAL Marks                                  |              |                                                                                |  |       |       |       |       |       |       | (S.N. 1-55) |     |
|------------------------------------------------------------------|--------------|--------------------------------------------------------------------------------|--|-------|-------|-------|-------|-------|-------|-------------|-----|
| Module No.                                                       | Question No. | Question                                                                       |  |       |       |       |       |       |       | K Level     | CO  |
| 1                                                                | 11.a.        | Define statistics. Briefly explain its need in business.                       |  |       |       |       |       |       |       | K2          | CO1 |
|                                                                  | (OR)         |                                                                                |  |       |       |       |       |       |       |             |     |
|                                                                  | 11.b.        | A retail company recorded the monthly sales (in ₹10,000) of its branch stores. |  |       |       |       |       |       |       |             |     |
|                                                                  |              | Sales                                                                          |  | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 |             |     |
|                                                                  |              | No.of Stores                                                                   |  | 5     | 9     | 14    | 12    | 7     | 3     |             |     |
| Draw the less than and more than o-gives for the following data. |              |                                                                                |  |       |       |       |       |       |       |             |     |
| Hence locate the median.                                         |              |                                                                                |  |       |       |       |       |       |       |             |     |

Cont...

|   |       |                                                                                                                                                                                                                                                                                                                                                                      |       |       |       |       |       |    |     |
|---|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|-------|-------|----|-----|
| 2 | 12.a. | What is the measures of central tendency? State its types. Give the merits and demerits of arithmetic mean.                                                                                                                                                                                                                                                          |       |       |       |       |       | K3 | CO2 |
|   | (OR)  |                                                                                                                                                                                                                                                                                                                                                                      |       |       |       |       |       |    |     |
|   | 12.b. | A company recorded the monthly commission (in ₹1000) earned by its sales employees. Find the quartile deviation.                                                                                                                                                                                                                                                     |       |       |       |       |       |    |     |
|   |       | Commision                                                                                                                                                                                                                                                                                                                                                            | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 |    |     |
|   |       | No. of Employees                                                                                                                                                                                                                                                                                                                                                     | 6     | 14    | 20    | 10    | 5     |    |     |
| 3 | 13.a. | What is scatter diagram? Draw scatter diagram when<br>i) $r = +1$ ii) $r = -1$ iii) $r = 0$ iv) $r > 0$ v) $r < 0$                                                                                                                                                                                                                                                   |       |       |       |       |       | K4 | CO3 |
|   | (OR)  |                                                                                                                                                                                                                                                                                                                                                                      |       |       |       |       |       |    |     |
|   | 13.b. | Define regression. State the properties of regression coefficients.                                                                                                                                                                                                                                                                                                  |       |       |       |       |       |    |     |
| 4 | 14.a. | Explain classical and statistical probability with example.                                                                                                                                                                                                                                                                                                          |       |       |       |       |       | K3 | CO4 |
|   | (OR)  |                                                                                                                                                                                                                                                                                                                                                                      |       |       |       |       |       |    |     |
|   | 14.b. | A company has two sales teams Team A and Team B. Probability that Team A closes a deal = 0.6 and Team B closes a deal = 0.7 Assuming the performances of the two teams are independent, find<br>i) the probability that both teams close deals.<br>ii) the probability that only Team A closes a deal.<br>iii) the probability that at least one team closes a deal. |       |       |       |       |       |    |     |
| 5 | 15.a. | Describe how Microsoft Excel can be used to calculate the following functions: i) MEAN ii) MEDIAN iii) MODE                                                                                                                                                                                                                                                          |       |       |       |       |       | K5 | CO5 |
|   | (OR)  |                                                                                                                                                                                                                                                                                                                                                                      |       |       |       |       |       |    |     |
|   | 15.b. | Explain the meaning of skewness and correlation in statistics. Describe how Excel functions SKEW and CORREL are used to alayse the business data.                                                                                                                                                                                                                    |       |       |       |       |       |    |     |

**SECTION -C (30 Marks)**

Answer ANY THREE questions  
ALL questions carry EQUAL Marks

(3 x 10 = 30)

| Module No.                                                                                                               | Question No. | Question                                                                                                                                                                                                                                                                                                                    | K Level | CO  |     |     |     |     |     |    |
|--------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----|-----|-----|-----|-----|-----|----|
| 1                                                                                                                        | 16           | Explain the preparation of questionnaire with illustration.                                                                                                                                                                                                                                                                 | K2      | CO1 |     |     |     |     |     |    |
| 2                                                                                                                        | 17           | An e-commerce company recorded the delivery time (in days) for orders. Find the Karl Pearson's coefficient of skewness. Comment on it.                                                                                                                                                                                      | K3      | CO2 |     |     |     |     |     |    |
|                                                                                                                          |              | No.of Days                                                                                                                                                                                                                                                                                                                  |         |     | 1-2 | 2-3 | 3-4 | 4-5 | 5-6 |    |
|                                                                                                                          |              | No. Of Orders                                                                                                                                                                                                                                                                                                               |         |     | 8   | 15  | 22  | 10  | 5   |    |
| 3                                                                                                                        | 18           | A company wants to study the relationship between advertisement expenditure (X) and sales revenue (Y).                                                                                                                                                                                                                      | K4      | CO3 |     |     |     |     |     |    |
|                                                                                                                          |              | X                                                                                                                                                                                                                                                                                                                           |         |     | 10  | 12  | 13  | 16  | 18  | 20 |
|                                                                                                                          |              | Y                                                                                                                                                                                                                                                                                                                           |         |     | 25  | 30  | 33  | 40  | 42  | 45 |
| Calculate the Karl Pearson's correlation coefficient between advertisement cost and sales revenue. Interpret the result. |              |                                                                                                                                                                                                                                                                                                                             |         |     |     |     |     |     |     |    |
| 4                                                                                                                        | 19           | A bank processes loan applications through two departments: Online Processing and Branch Processing. 60% of applications are processed online and 8% of these are rejected. 40% of applications are processed through branches and 5% of these are rejected. A loan application selected at random is found to be rejected. | K3      | CO4 |     |     |     |     |     |    |
|                                                                                                                          |              | a) Find the probability that the rejected application came from online processing.                                                                                                                                                                                                                                          |         |     |     |     |     |     |     |    |
|                                                                                                                          |              | b) Find the probability that the rejected application came from branch processing.                                                                                                                                                                                                                                          |         |     |     |     |     |     |     |    |
|                                                                                                                          |              | c) Which department contributes more to rejected loans?                                                                                                                                                                                                                                                                     |         |     |     |     |     |     |     |    |
| 5                                                                                                                        | 20           | A firm collected data on advertising expense (x) and sales(y).                                                                                                                                                                                                                                                              | K5      | CO5 |     |     |     |     |     |    |
|                                                                                                                          |              | X                                                                                                                                                                                                                                                                                                                           |         |     | 10  | 15  | 20  | 25  | 30  |    |
|                                                                                                                          |              | Y                                                                                                                                                                                                                                                                                                                           |         |     | 100 | 120 | 150 | 170 | 200 |    |
|                                                                                                                          |              | Using Excel Data Analysis Tool Pak:<br>i) Perform Regression Analysis<br>ii) Identify Regression Equation<br>Iii) Predict the expected sales when advertising expense is 35                                                                                                                                                 |         |     |     |     |     |     |     |    |