

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2026
(First Semester)

Branch- INFORMATION TECHNOLOGY

STATISTICS FOR INFORMATION TECHNOLOGY- I

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry EQUAL marks

$$(10 \times 1 = 10)$$

Module No.	Question No.	Question	K Level	CO
1	1	The point of the intersection of the 'less than' and 'more than' O-give corresponds to a) Mean b) Median c) Geometric Mean d) Harmonic Mean	K1	CO1
	2	The difference between the largest and smallest observation in a data set is called (a) Mean Deviation (b) Quartile Deviation (c) Range (d) Standard Deviation	K2	CO1
2	3	The correlation coefficient lies in the interval (a) $-1 \leq r \leq 0$ (b) $-1 < r < 1$ (c) $0 \leq r \leq 1$ (d) $-1 \leq r \leq 1$	K1	CO2
	4	Regression coefficients are independence of the change of a) origin and scale b) origin only c) scale only d) Neither origin nor scale	K2	CO2
3	5	Binomial expansion method assumes (a) Equal intervals (b) Unequal intervals (c) Random intervals (d) None	K1	CO3
	6	In Newton's interpolation methods, the independent variable values should be (a) Equally spaced b) Randomly spaced (c) In descending order only (d) Unequal intervals	K2	CO3
4	7	The component which represents short-term periodic movements repeating every year is (a) Trend (b) Seasonal variation (c) Cyclical variation (d) Irregular variation	K1	CO4
	8	In the equation $Y = a + bx + cx^2$, "c" represent a) Y-intercept b) Slope of the line c) Coefficient of the quadratic term d) Constant	K2	CO4
5	9	The Data Analysis Toolpak in Excel is used for (a) Descriptive statistics (b) Formatting (c) Sorting (d) Charting only	K1	CO5
	10	Which function in Excel is used to calculate the mean of a dataset? (a) AVERAGE() (b) MEAN() (c) MEDIAN() (d) MODE()	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO																		
1	11.a.	State the uses of Statistics in information technology	K3	CO1																		
	(OR)																					
	11.b.	Calculate the median from the following data <table> <tr> <th>Weight (in gms)</th> <th>No. of apples</th> <th>Weight (in gms)</th> <th>No. of apples</th> </tr> <tr> <td>410 – 419</td> <td>14</td> <td>450 – 459</td> <td>45</td> </tr> <tr> <td>420 – 429</td> <td>20</td> <td>460 – 469</td> <td>18</td> </tr> <tr> <td>430 – 439</td> <td>42</td> <td>470 – 479</td> <td>7</td> </tr> <tr> <td>440 – 449</td> <td>54</td> <td></td> <td></td> </tr> </table>			Weight (in gms)	No. of apples	Weight (in gms)	No. of apples	410 – 419	14	450 – 459	45	420 – 429	20	460 – 469	18	430 – 439	42	470 – 479	7	440 – 449	54
Weight (in gms)	No. of apples	Weight (in gms)	No. of apples																			
410 – 419	14	450 – 459	45																			
420 – 429	20	460 – 469	18																			
430 – 439	42	470 – 479	7																			
440 – 449	54																					
2	12.a.	Compute Pearson's coefficient of skewness: <table> <tr> <td>x</td> <td>12.5</td> <td>17.5</td> <td>22.5</td> <td>27.5</td> <td>32.5</td> <td>37.5</td> <td>42.5</td> <td>47.5</td> </tr> <tr> <td>f</td> <td>28</td> <td>42</td> <td>54</td> <td>108</td> <td>129</td> <td>61</td> <td>45</td> <td>33</td> </tr> </table>	x	12.5	17.5	22.5	27.5	32.5	37.5	42.5	47.5	f	28	42	54	108	129	61	45	33	K4	CO2
	x	12.5	17.5	22.5	27.5	32.5	37.5	42.5	47.5													
	f	28	42	54	108	129	61	45	33													
(OR)																						
12.b.	For the given values, $\bar{X} = 65$, $\bar{Y} = 67$, $\sigma_x = 2.5$, $\sigma_y = 3.5$, $r = 0.8$. Find the two regression equations that are associated with the above values.																					
3	13.a.	From the following table of yearly premiums for policies maturing at quinquennial ages, estimate the premiums for policies maturing at the ages 46 years. <table> <tr> <td>Age (x)</td> <td>45</td> <td>50</td> <td>55</td> <td>60</td> <td>65</td> </tr> <tr> <td>Premium (U_x)</td> <td>2.871</td> <td>2.404</td> <td>2.083</td> <td>1.862</td> <td>1.712</td> </tr> </table>	Age (x)	45	50	55	60	65	Premium (U_x)	2.871	2.404	2.083	1.862	1.712	K5	CO3						
	Age (x)	45	50	55	60	65																
	Premium (U_x)	2.871	2.404	2.083	1.862	1.712																
(OR)																						
13.b.	The following table gives the census population of a town for the years 1961 to 2001. Estimate the population for the year 1995 by using an appropriate interpolation formula. <table> <tr> <td>Year</td> <td>1961</td> <td>1971</td> <td>1981</td> <td>1991</td> <td>2001</td> </tr> <tr> <td>Population (in lakhs)</td> <td>36</td> <td>66</td> <td>81</td> <td>93</td> <td>101</td> </tr> </table>	Year	1961	1971	1981	1991	2001	Population (in lakhs)	36	66	81	93	101									
Year	1961	1971	1981	1991	2001																	
Population (in lakhs)	36	66	81	93	101																	
4	14.a.	Narrate the steps to measure trend by the method of moving averages.	K3	CO4																		
	(OR)																					
	14.b.	Calculate seasonal indices by the ratio to moving average method, from the following data: <table> <tr> <td>Year</td> <td>1st Quarter</td> <td>2nd Quarter</td> <td>3rd Quarter</td> <td>4th Quarter</td> </tr> <tr> <td>2007</td> <td>68</td> <td>62</td> <td>61</td> <td>63</td> </tr> <tr> <td>2008</td> <td>65</td> <td>58</td> <td>66</td> <td>61</td> </tr> <tr> <td>2009</td> <td>68</td> <td>63</td> <td>63</td> <td>67</td> </tr> </table>			Year	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	2007	68	62	61	63	2008	65	58	66	61	2009	68	63
Year	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter																		
2007	68	62	61	63																		
2008	65	58	66	61																		
2009	68	63	63	67																		
5	15.a.	Write the description of the following statistical functions (i) AVERAGE() (ii) MAX() (iii) TREND (iv) SLOPE ()	K4	CO5																		
	(OR)																					
	15.b.	State the steps to calculate correlation coefficient in Excel.																				

SECTION -C (30 Marks)

Answer ANY THREE questions

ALL questions carry EQUAL Marks

(3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO																		
1	16	The wholesale price of a commodity for seven consecutive days in a month is as follows:	K4	CO1																		
		<table><tr><td>Days</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr><tr><td>Commodity/ price/quintal</td><td>14</td><td>21</td><td>25</td><td>43</td><td>51</td><td>40</td><td>39</td></tr></table>			Days	0	1	2	3	4	5	6	Commodity/ price/quintal	14	21	25	43	51	40	39		
		Days			0	1	2	3	4	5	6											
		Commodity/ price/quintal			14	21	25	43	51	40	39											
Calculate the variance and standard deviation.																						
2	17	Calculate the Spearman's rank correlation coefficient between price and supply from the following data:	K5	CO2																		
		<table><tr><td>Price</td><td>4</td><td>6</td><td>8</td><td>10</td><td>12</td><td>14</td><td>16</td><td>18</td></tr><tr><td>Supply</td><td>10</td><td>15</td><td>20</td><td>25</td><td>30</td><td>35</td><td>40</td><td>45</td></tr></table>			Price	4	6	8	10	12	14	16	18	Supply	10	15	20	25	30	35	40	45
		Price			4	6	8	10	12	14	16	18										
Supply	10	15	20	25	30	35	40	45														
3	18	Given $\log_{10} 654=2.8156$, $\log_{10} 658 = 2.8182$, $\log_{10} 659 = 2.8189$, $\log_{10} 661 = 2.8202$, find by Lagrange's interpolation formula $\log_{10} 656$.	K4	CO3																		
4	19	Describe the components of time series.	K5	CO4																		
5	20	Summarize the forecasting methods in excel.	K4	CO5																		

Z-Z-Z END

