

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

**BCom (CS) DEGREE EXAMINATION DECEMBER 2024
 (Second Semester)**

Common to Branches - **CORPORATE SECRETARYSHIP/ COMMERCE/
 COMMERCE(CA)/ e- COMMERCE/ COMMERCE(A&F)/ COMMERCE(B&I)**

STATISTICS

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	Which of the following represents data a) A single value b) Only two values in a set c) A group of values in a set d) None of the above	K1	CO1
	2	Relative error is always: a) Positive b) Negative c) Both a) & b) d) Zero	K2	CO1
2	3	Extreme value have no effect on: a) Mean b) Median c) Mode d) None of the above	K1	CO2
	4	Pie diagram represents the components of a factor by a) Percentages b) Angles c) Sectors d) Circles	K2	CO2
3	5	The value of correlation coefficient is zero, the variables X and Y are: a) Linearly related b) Independent c) Dependent d) None of the above	K1	CO3
	6	Regression coefficient is independent of a) Origin b) Scale c) Both a)& b) d) None of these	K2	CO3
4	7	Index numbers are the special case of: a) Averages b) Percentage relatives c) Ratios d) All the above	K1	CO4
	8	A good index number is one that satisfies a) Unit test b) Time and Factor reversal test c) Circular test d) All these tests	K2	CO4
5	9	Probability is expressed as: a) Ratio b) Percentages c) Proportion d) All the above	K1	CO5
	10	Given $P(A) = 1/3$, $P(B) = 3/4$ and $P(A \cup B) = 11/12$, find $P(B/A)$: a) $1/6$ b) $4/9$ c) $1/2$ d) None of the above	K2	CO5

Cont...

22CSU206N/ 22CSU206/22COU206N/22COU206/
22COC206N/22COC206/22COE206N/22COE206/
22AFU206N/22AFU206/22CBI206N/22CBI206
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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.	Explain the two kinds of statistical data.	K2	CO1																		
	(OR)																					
	11.b.	Draw a multiple bar diagram from the following data.																				
		Year			Sales (000 Rs)	Gross Profit (000 Rs)	Net Profit (000 Rs)															
		1974			100	30	10															
1975		120	40	15																		
1976		130	45	25																		
1977	120	50	25																			
2	12.a.	The following is the distribution of marks of 80 students in a class. Apply coefficient of variation. <table><tr><td>Marks</td><td>0-10</td><td>10-20</td><td>20-30</td><td>30-40</td><td>40-50</td></tr><tr><td>No. of students</td><td>12</td><td>13</td><td>21</td><td>19</td><td>15</td></tr></table>	Marks	0-10	10-20	20-30	30-40	40-50	No. of students	12	13	21	19	15	K4	CO2						
	Marks	0-10	10-20	20-30	30-40	40-50																
	No. of students	12	13	21	19	15																
	(OR)																					
12.b.	What are the measures of dispersion? Summarize the importance of measures of dispersion.																					
3	13.a.	Distinguish between correlation and regression.	K3	CO4																		
	(OR)																					
	13.b.	Apply the Coefficient of Correlation between X-Advertisement Expenditure and Y-Sales.																				
		<table><tr><td>X</td><td>10</td><td>12</td><td>18</td><td>8</td><td>13</td><td>20</td><td>22</td><td>15</td><td>5</td><td>17</td></tr><tr><td>Y</td><td>88</td><td>90</td><td>94</td><td>86</td><td>87</td><td>92</td><td>96</td><td>94</td><td>88</td><td>85</td></tr></table>			X	10	12	18	8	13	20	22	15	5	17	Y	88	90	94	86	87	92
X	10	12	18	8	13	20	22	15	5	17												
Y	88	90	94	86	87	92	96	94	88	85												
4	14.a.	Define Index numbers and summarizes the various types of Index numbers.	K3	CO4																		
	(OR)																					
	14.b.	Construct the Index numbers by Using i) Laspeyre's Method ii) Passche's Method iii) Fisher's Method																				
		Item			Base Year		Current Year															
		Price	Quantity	Price	Quantity																	
A		6	50	10	50																	
B		2	100	2	120																	
C	4	60	6	60																		
D	10	30	12	25																		
5	15.a.	Summarizes the properties for Normal distribution.	K4	CO5																		
	(OR)																					
	15.b.	In a Binomial distribution consisting of 5 independent trials, probabilities of 1 and 2 successes are .4096 and .2048 respectively. Find the 'p' of the distribution.																				

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22CSU206N/ 22CSU206/22COU206N/22COU206/
 22COC206N/22COC206/22COE206N/22COE206/
 22AFU206N/22AFU206/22CBI206N/22CBI206
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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	Represent the following data by a Pie diagram.	K3	CO1					
		Item			Food	Clothing	Rent	Education	Fuel
		FamilyA (in Rs)			2,400	200	800	150	450
2	17	Apply Mean, Median and Mode from the following marks.	K4	CO2					
		Marks			0-10	10-20	20-30	30-40	40-50
		No.of students			3	5	9	3	2

3	18	Analyze the two regression equations from the following data. <table><tr><td>X</td><td>25</td><td>28</td><td>35</td><td>32</td><td>31</td><td>36</td><td>29</td><td>38</td><td>34</td><td>32</td></tr><tr><td>Y</td><td>43</td><td>46</td><td>49</td><td>41</td><td>36</td><td>32</td><td>31</td><td>30</td><td>33</td><td>39</td></tr></table>	X	25	28	35	32	31	36	29	38	34	32	Y	43	46	49	41	36	32	31	30	33	39	K4	CO3												
X	25	28	35	32	31	36	29	38	34	32																												
Y	43	46	49	41	36	32	31	30	33	39																												
4	19	Using the following data, construct the Fisher's prize index. Also verify whether it is an Ideal Index number. <table><tr><th rowspan="2">Item</th><th colspan="2">Base Year</th><th colspan="2">Current Year</th></tr><tr><th>Price</th><th>Quantity</th><th>Price</th><th>Quantity</th></tr><tr><td>A</td><td>6</td><td>50</td><td>10</td><td>56</td></tr><tr><td>B</td><td>2</td><td>100</td><td>2</td><td>120</td></tr><tr><td>C</td><td>4</td><td>60</td><td>6</td><td>60</td></tr><tr><td>D</td><td>10</td><td>30</td><td>12</td><td>24</td></tr><tr><td>E</td><td>8</td><td>40</td><td>12</td><td>36zs</td></tr></table>	Item	Base Year		Current Year		Price	Quantity	Price	Quantity	A	6	50	10	56	B	2	100	2	120	C	4	60	6	60	D	10	30	12	24	E	8	40	12	36zs	K3	CO4
Item	Base Year			Current Year																																		
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D	10	30	12	24																																		
E	8	40	12	36zs																																		
5	20	In a bolt factory, machines M_1 , M_2 and M_3 manufacture respectively 25,35 and 40 percent of the total output. Of their output 5, 4 and 2 percent respectively are defective bolts. One bolt is drawn at random from the product and is found to be defective. What is the probability that it is manufactured in the machine M_3 ?	K4	CO5																																		

Z-Z-Z

END