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PSG COLLEGE OF ARTS & SCIENCE

(AUTONOMOUS)

BVoc DEGREE EXAMINATION MAY 2025

(First Semester)

Branch - **NETWORKING AND MOBILE APPLICATION**

STATISTICAL TECHNIQUES

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks (10 × 1 = 10)

Question No.	Question	K Level	CO
1	When a group of people is categorized into male and female, then the type of data is called as _____. a) Qualitative b) Quantitative c) Geographical d) Chronological	K1	CO1
2	In a Pie diagram, the total angle measure of the sectors is _____degree. a) 60 b) 90 c) 270 d) 360	K2	CO1
3	If the points are scattered all over the scatter diagram, then the two variables are said to have _____ correlation. a) positive b) negative c) zero d) high degree	K1	CO2
4	If increase in the value of one variable induces increase in the value of other variable, then the correlation is said to be _____ a) negative b) positive c) zero d) none of these	K2	CO2
5	A set of observations arranged in chronological order is called as a) unbounded set b) null set c) Infinite d) Time series	K1	CO3
6	Ratio to moving average method is used to calculate _____trend. a) seasonal b) secular c) cyclic d) irregular	K2	CO3
7	If two events A and B are mutually exclusive, then $P(A \text{ or } B) =$ _____. a) $P(A)P(B)$ b) $P(A) + P(B)$ c) $P(A) - P(B)$ d) $P(A)$	K1	CO4
8	An operation or action which can produce any result or outcome is called a _____ experiment. a) random b) exclusive c) dependent d) none of these	K2	CO4
9	The command used to check the correlation between any two given variable in Excel is a) MIN ( ) b) MAX () -MIN() c) CORREL() d) none of these	K1	CO5
10	The Excel command for calculating Poisson distribution for the given data set is _____ a) POISSON.DIST() b) POISSON() c) POISSONDIST() d) none of these	K2	CO5

SECTION - B (35 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Question No.	Question	K Level	CO
11.a.	Distinguish between Qualitative and Quantitative data with suitable examples.	K4	CO1
	(OR)		
11.b.	Analyze median for the following data x: 10-25 | 25-40 | 40-55 | 55-70 | 70-85 | 85-100 f: 6 | 20 | 44 | 26 | 3 | 1		

Cont...

12.a.	Determine the regression equation Y on X for the following variables X: 2, 8, 10, -2, 5, -4 Y: 3, 2, 5, 10, -2, -3	K5	CO2
	(OR)		
12.b.	Find a suitable coefficient of correlation for the following data x_1: 64, 65, 66, 67, 68, 69, 70 x_2: 66, 67, 65, 68, 70, 68, 72		
13.a.	Apply the ratio to moving average method from the data given below and find the seasonal variations Seasons: 2011, 2012, 2013, 2014, 2015 I Quarter: 40, 42, 41, 45, 44 II Quarter: 35, 37, 35, 36, 38 III Quarter: 38, 39, 38, 36, 38 IV Quarter: 40, 38, 42, 41, 42	K3	CO3
	(OR)		
13.b.	By applying the method of least squares, find the trend values for the following data Year: 2011, 2012, 2013, 2014, 2015 Sales: 70, 74, 80, 86, 90		
14.a.	The average percentage of failure in a certain examination is 40. What is the probability that out of a group of 6 candidates, at least 4 passed in the examination? Assume binomial distribution.	K3	CO4
	(OR)		
14.b.	The lifetime of a certain kind of battery has a mean of 300 hours and a standard deviation of 35 hours. Assuming that the distribution of lifetimes, which are measured to the nearest hour, is normal, find the percentage of batteries which have lifetime of more than 370 hours.		
15.a.	Compare the measures of central tendency and write their syntax in Excel.	K4	CO5
	(OR)		
15.b.	Examine the data of the proposed voting behavior by placing the data in Excel by drawing a bar chart Party: Conservative, Labor, Democrat, Republic, Other Frequency: 400, 510, 78, 55, 67		

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Question No.	Question	K Level	CO
16	Estimate the standard deviation of the following data Wages (rs): 0-10, 10-20, 20-30, 30-40, 40-50, 50-60, 60-70 No. of workers: 8, 12, 17, 14, 9, 7, 4	K5	CO1
17	Analyze the rank correlation coefficient after making adjustment for tied ranks. X: 48, 33, 40, 9, 16, 16, 65, 24, 16, 57 Y: 13, 13, 24, 6, 15, 4, 20, 9, 6, 19	K4	CO2
18	Analyze the methods of Moving averages and measuring seasonal variations and their merits and demerits.	K5	CO3
19	Fit a Poisson distribution to the following data x: 0, 1, 2, 3, 4 f: 123, 59, 14, 3, 1	K4	CO4
20	Examine the excel solution for calculating Pearson's correlation coefficient and draw a scatter plot for the data set A = {20, 45, 56, 64, 34} B = {12, 23, 45, 34, 25}	K4	CO5

Z-Z-Z END