UNIVERSITY OF PETROLEUM & ENERGY STUDIES
End Semester Examination (Online), May 2021

Program: BBA-FAS   **Semester: II**
Subject/Course: BUSINESS STATISTICS   **Max. Marks: 100**
Course Code: DSQT 1004   **Duration: 3 Hours**

SECTION A

1. **Each Question will carry 5 Marks.**
2. **Instruction: Complete the statement / Select the correct answer(s)**

Q.No		CO
Q1	Two dice are rolled. Find the probability that the sum of the outcomes is equal to a) at most 7 b) at least 8	**CO5**
Q2	Explain the different types of correlation with examples for each type.	**CO4**
Q3	Define the term Skewness, and explain any two methods of finding Skewness	**CO3**
Q4	Define the various types of Data Scaling with one example of each scale.	**CO1**
Q5	Find the Mean deviation about the median for the following data: 3, 9, 5, 3, 12, 10, 18, 4, 7, 19, 21	**CO2**
Q6	The two regression lines are given as $8X – 10Y + 66 = 0$ and $40X – 18Y = 214$. Find a) Mean of X and Y b) Correlation Coefficient between X and Y.	**CO4**

SECTION B

1. **Each question will carry 10 marks**

Q7	a) "Modern statistical tools and techniques are basically important for improving the quality of managerial decisions." Explain this statement. b) Explain coefficient of variation, and its importance in business problems	**CO1**
Q8	**The sales data range is given below. Find value of median and modal sales.** 	Sales (Rs. Lakhs)	Number of Companies	Sales (Rs. Lakhs)	Number of Companies
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Below 60	12	66 - 68	10
60 – 62	18	68 - 70	3
62 – 64	25	70 – 72	2
64 – 66	30				**CO2**

Q9	a) The annual rates of growth of a company in 5 years are 5, 7.5, 2.5, 5 and 10 respectively. Compute the compound rate of growth per annum for the period? b) In a factory a unit of work is completed by A, B, C, D, E in 4, 5, 6, 10 and 12 minutes respectively. Compute average number of units of work completed per unit time using Harmonic Mean, and hence compute how many units will they complete in a six-hour day?	CO2
Q10	A box contains 3 white, 5 red and 8 blue balls. If 3 balls are drawn at random, find the probability that (a)All are white (b)two of them are white (c)exactly one is white (d)at least one is white (e) each ball is of different color	CO5

Compute the coefficient of variation and quartile deviation for this data:

Height (in cm)	No. of students		Height (in cm)	No. of Students
126-130	31	|	146-150	60
131-135	44	|	151-155	55
136-140	48	|	156-160	43
141-145	51	|	161-165	28

<div align="center">OR</div>

Q11 | **The table below gives wages distribution of a factory. Compute the limits of daily wages of central 50% of observed workers and Bowley's coefficient of skewness.** | **CO3**

Daily Wages	No. of workers
Below 250	10
200-250	25
250-300	145
300-350	220
350-400	70
400 and above	30

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SECTION C – 20 MARKS

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a) You are given the data relating to purchases and sales. Obtain the two regression equations and estimate the likely sales when the purchases equal 100

Sales:	91	97	108	121	67	124	51	73	111	57
Purchases:	71	75	69	97	70	91	39	61	80	47

Q11

b) An exam of 8 candidates was taken by a company. From the marks obtained by them in Accounts and Statistics, compute the rank correlation coefficient

CO4

	A	B	C	D	E	F	G	H
Accounts:	15	20	28	12	40	60	20	80
Statistics:	40	30	50	30	20	10	30	60