UNIVERSITY OF PETROLEUM & ENERGY STUDIES
EndSemester Examination – December, 2022

Program: MBA
Subject/Course: Quantitative Methods
Course Code: DSQT 7001

Semester: I
Max. Marks: 100
Duration: 3 Hours

Q.No.	Section A	10Q×2M=20M	COs
	Question	**Marks**	**COs**
1	Given a normally distributed continuous variable the best measure of central tendency is i) Mode ii) Median iii) Mean iv) None of the Above	2	CO 1
2	A graph of a cumulative frequency distribution is called i) Ogive ii) Frequency Polygon iii) Frequency Curve iv) Pie Diagram	2	CO 1
3	The arithmetic mean of two numbers a and b is i) (a-b)/2 ii) (a+b)/2 iii) (ab)/2 iv) a/b	2	CO 1
4	A measure of variability computed by taking the positive square root of the variance is known as i) Mean deviation ii) Quartile Deviation iii) Coefficient of Variation iv) Standard Deviation	2	CO 1
5	Which among the following are the parameters of binomial distribution?	2	CO1

	i) n ii) p iii) n, p and q iv) n and p		
6	For normal distribution the coefficient of skewness is equal to? i) 1 ii) -1 iii) 3 iv) 0	2	CO1
7	If A and B are two events such that the occurring of one is not affected by the occurring of any other event, then the two events are called? i) Complementary ii) Independent iii) Mutually Exclusive iv) Dependent	2	CO1
8	The two regression coefficients must have? i) Same sign ii) Opposite sign iii) Either same or opposite iv) Nothing can be said	2	CO1
9	The Distribution having mean and variance equal is i) Normal ii) Binomial iii) Poisson iv) None of the above	2	CO1
10	If the relationship between variables x and y is positive, as variable y decreases. Variable x i) Increases ii) Decreases iii) Remains Same iv) Changes Linearly	2	CO1
	Section-B **(Solve all the questions)**	4Q×5M=20M	
11.	Write a brief note on application of statistics in business and industry.	5	CO 2

12.	The 3rd term of G.P. is 24 and 6th term is 192. Find the G.P. Also find the 10th term.	5	CO 2
13.	Determine Mean and Median of the following distribution.	5	CO 2

Wages	20	21	22	23	24	25	26	27
No. of Workers	8	10	11	16	20	25	19	9

14.	From a well-shuffled pack of card two cards are drawn simultaneously. Find the probability of getting 1 King and 1 Ace card.	5	CO 3

Q.No.	**Section-C** **(Solve any three questions)**	3Q×10M=30M	
15.	Calculate the correlation coefficient between price and sales from the following data and interpret the results.	10	CO 3

Price (Rs)	100	90	85	92	90	84	88	90
Sales	5	6	7	6	7	8	8	7

16.	The following data represent the expenditure incurred on following heads by a company during year 2022. Construct the pie Chart	10	CO 3

Expenditure Head	Amount
Raw Material	1689
Taxes	582
Manufacturing Expenses	543
Employees Salary	470
Depreciation	94
Dividend	75
Misc. Expenses	286
Retained Income	51

17.	Explain the term "Dispersion". What purpose does a measure of dispersion serve? In light of these, comment on some of the well-known measures of dispersion.	10	CO3
18.	A study of 100 engineering companies gives the following information. Calculate the standard deviation of the profit earned.	10	CO3

Profit (Cr)	0-10	10-20	20-30	30-40	40-50	50-60
Number of Companies	8	12	20	30	20	10

Q.No.	**Section-D** **(Solve any two questions)**	2Q×15M=30M	
19.	There are a number of possible measures of sales performance, including how consistent a sales person is, in meeting established sales goals. The following data represent the percentage of goal met by each of three sales persons over the past five years. Which salesman is most consistent. <table><tr><td>Raman</td><td>88</td><td>68</td><td>89</td><td>92</td><td>103</td></tr><tr><td>Sindhu</td><td>76</td><td>88</td><td>90</td><td>86</td><td>79</td></tr><tr><td>Prasad</td><td>104</td><td>88</td><td>118</td><td>88</td><td>123</td></tr></table>	15	CO4
20.	The profits (in Lakhs) of 30 companies for the year 2021-2022 are given below. <table><tr><td>20</td><td>22</td><td>35</td><td>42</td><td>37</td><td>42</td><td>48</td><td>53</td><td>49</td><td>65</td></tr><tr><td>39</td><td>48</td><td>67</td><td>18</td><td>16</td><td>23</td><td>37</td><td>35</td><td>49</td><td>63</td></tr><tr><td>65</td><td>55</td><td>45</td><td>58</td><td>57</td><td>69</td><td>25</td><td>29</td><td>58</td><td>65</td></tr></table> a) Form a frequency distribution b) Form a Cumulative Frequency Distribution c) Form a Relative Frequency Distribution	15	CO4
21.	The following data relate to the scores obtained by 9 salesmen of a company in an intelligence test and their weekly sales. <table><tr><td>Test Score</td><td>50</td><td>60</td><td>50</td><td>60</td><td>80</td><td>50</td><td>80</td><td>40</td><td>70</td></tr><tr><td>Weekly Sales</td><td>30</td><td>60</td><td>40</td><td>50</td><td>60</td><td>30</td><td>70</td><td>50</td><td>60</td></tr></table> a) Obtain the regression equation of sales on intelligence test scores of the salesman. b) If the Intelligence test score of a salesman is 65, what would be his expected weekly sales?	15	CO4