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Program	:	BBA(FT,DM,AM,LM,MM,A&IS,AO)					
Semester	:	II					
Name of the Subject (Course)	:	Business Statistics					
Course Code	:	DSQT1004					
Name of Question Paper Setter	:	Dr. Jyoti Pandey					
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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2018

Program: BBA (FT, DM, AM, LM, MM, A&IS, AO)

Subject (Course): Business Statistics

Course Code : DSQT1004

No. of page/s: 4

Semester – II

Max. Marks : 100

Duration : 3 Hrs

Section A

- 1) Fill in the blanks: (1x10)
- a) The number of observations corresponding to a particular class is known the of the class.
 - b) The heading of the row in a statistical table is known as
 - c) Median is same asQuartile.
 - d) Central tendencyand can be calculated from the frequency distribution with open end classes.
 - e) If the coefficient of kurtosis has a value less than 3, the distribution is
 - f) In regression analysis, the variable we are trying to predict, is called thevariable.
 - g) If both the regression coefficients are negative, the correlation coefficient would be
 - h) The under-root of twocoefficients gives us the value of correlation coefficient.
 - i) Probability ranges fromto
 - j) If A and B are mutually exclusive events, $P(A/B)=$
- 2) State which of the following statements is true or false: (1x10)
- a) Sampling errors are present both in a census as well as a sample survey.
 - b) Sampling error can be reduced by increasing the size of the sample.

- c) A relative frequency can be obtained by dividing the frequency by the total number of observations.
- d) Arithmetic mean can be computed for open end distributions.
- e) Coefficient of variation is expressed in same units as the original data.
- f) In a frequency distribution, if a curve has a longer tail to the right, then it is negatively skewed.
- g) Coefficient of correlation must be in the same units as the original data.
- h) The negative correlation in two series means that, as the value of the variables, decreases the value of the other variable would also decrease.
- i) The regression line cut each other at the point of average of X and Y.
- j) The conditional probability of the given A is written as $P(A/B)$.

Section B

Answer all the question of this section

(5x4)

- 3) Explain the concept of regression. What are the properties of the regression coefficients?
- 4) Explain difference between independent and mutually exclusive events and also give examples.
- 5) Explain the methods of calculation of correlation coefficient. What are the advantages of Spearman's rank correlation over Karl Pearson's correlation coefficients?
- 6) Define mean deviation. How does it differ from standard deviation?

Section C

Answer any five of the following questions

(6x5)

- 7) Calculate the lines of regression for the following data:

X	1	2	3	4	5	6	7
Y	9	8	10	12	11	13	14

Obtain an estimate of Y which should correspond to the $X=6.2$

- 8) Calculate coefficient of correlation from the following data.

X	12	9	8	10	11	13	7
Y	14	8	6	9	11	12	3

9) From the following data calculate the rank correlation coefficient.

x	48	33	40	9	16	65	24	16	57
y	13	13	24	6	4	20	9	6	19

10) Two students X and Y work independently on a problem. The probability that X will solve it is $\frac{3}{4}$ and the probability that Y will solve it is $\frac{2}{3}$. What is the probability that the problem will be solved?

11) In a frequency distribution the coefficient of skewness based on quartiles is 0.5. If the sum of upper and lower quartiles is 28 and the median is 11, find the values of lower and upper quartile.

12) Find the median:

Wages Rs.	No. of labours
60-70	5
50-60	10
40-50	20
30-40	5
20-30	3

Section D

Answer following questions

13) You are given below the following information about advertising and sales.

	Advertising (X) Expenditure (Rs. In Crores)	Sales(Y) (Rs. In Crores)
Mean	10	90
Standard Deviation	3	12
Coefficient of correlation	0.8	

- (a) Calculate the two regression lines. (10)
- (b) Find the likely sales when advertisement expenditure is Rs 15 crores. (5)
- (c) What should be advertisement expenditure if the company wants to attain sales target of Rs. 20 crores? (5)
- 14)** The coefficient of rank correlation of marks obtained by 10 students in English and Economics was found to be 0.5. It was later discovered that the difference in ranks in the two subjects obtained by one of the students was wrongly taken as 3 instead of 7. Find the correct coefficient of rank correlation. (10)