

Reg.No :

D.K.M. COLLEGE FOR WOMEN (AUTONOMOUS), V
SEMESTER EXAMINATIONS
APRIL – 2019

ELECTIVE II : BUSINESS STATISTICS AND OPERATI

Time : 3 Hours

SECTION-A (10 x 2 = 20)

Answer ALL the questions.

1. What is meant by Correlation?
2. Define Regression.
3. What is an Index number?
4. What is Price Index?
5. What is moving average in the time series analysis?
6. Give any two uses of Regression.
7. What is addition theorem and their mathematical expansion?
8. What is Probability?
9. Describe a Transportation problem.
10. What do you understand by interpolation?

SECTION- B (5 x 5 = 25)

Answer any FIVE of the following questions.

11. A random sample of 5 college students is selected and their grades in mathematics are found to be:

	1	2	3	4	5
Mathematics	85	60	73	40	90
Statistics	93	75	65	50	80

13. From the following data, calculate Laspeyre's Index Number.

Commodity	2001		2000	
	Price	Quality	Price	Quality
A	05	15	07	10
B	04	05	06	08
C	07	04	09	06
D	52	02	55	03

14. Distinguish between Correlation and Regression.

15. Compute Price Index from the following by using Simple Aggregative method.

Commodity	A	B	C	D	E
Price in 2003 (Rs.)	200	300	100	250	400
Price in 2008 (Rs.)	250	300	150	350	450

16. Out of 6 Hindus and 3 Muslims, a Cabinet of 5 Ministers is to be formed. In how many ways can this be done if the cabinet is to include at least 3 Hindus?

17. Two students X and Y work independently on a problem. The probability that X will solve it is 3/4 and the probability that Y will solve it is 2/3. What is the probability that the problem will be solved by at least one of them?

18. Fit a Straight line trend for the following data by the method of least squares.

Year	2006	2007	2008	2009	2010
Production	7	9	12	15	18

- (b) Calculate the two regression equation of X on Y and Y on X from the data given below. Also calculate the standard deviation from actual means of X and Y.

Price (Rs.)	10	12	13	12	16
Amount Demand	40	38	43	45	37

Estimate the likely demand when the price is Rs. 20.

20. (a) A box contains 8 red, 3 white and 9 blue balls. If 3 balls are drawn at random, find the probability that,
- All 3 are red
 - All 3 are white
 - 2 are red and one is blue
 - one of each colour is drawn.

(Or)

- (b) Use binomial expansion method to find of Y when X = 5 from the following data:

X	2	3	4	6	7
Y	1	5	13	61	125

21. (a) Calculate Fisher's Ideal Index from the following data and prove that it satisfies the time reversal test and factor reversal test.

Commodity	2002		2003	
	Price	Quality	Price	Quality
A	08	16	10	12
B	10	20	12	25
C	06	12	08	15
D	16	10	20	12

(Or)

- (b) A department head has four subordinates' and four tasks to be performed. The following table shows the time taken by each subordinate to complete each task.

