LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **STATISTICS**

THIRD SEMESTER – NOVEMBER 2011

ST 3104 - BUSINESS STATISTICS

Date : 09-11-2011   Dept. No.   Max. : 100 Marks
Time : 9:00 - 12:00

SECTION A

Answer ALL questions.   **(10 x 2 =20 marks)**

1. Define statistics.
2. Define mode. Give an example.
3. If S = 20 and L = 60, what is the coefficient of Range?
4. Write down the formulae for Regression coefficients X on Y and Y on X.
5. Define correlation.
6. Mention any two uses of Time series.
7. What is Index Series?
8. List out Methods of finding an Initial Basic Feasible Solution (IBFS).
9. Explain Assignment Problem.
10. State the various measures of dispersion.

SECTION B

Answer any FIVE questions.   **(5 x 8 =40 marks)**

11. Explain the scope and limitations of statistics.

12. Draw a Histogram and Frequency Polygon for the following data:

Marks	5-10	10-15	15-20	20-25	25-30	30-35	35-40
No. of Students	10	15	25	40	30	35	45

13. Calculate Median and Mode from the following data:

Class	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	10	20	30	50	40	30

14. Two cricketer scored the following runs in five matches. Find who is more consistent player.

Raina	65	25	90	80	40
Yuvaraj	60	35	50	40	65

15. Construct the Price index numbers to the following data By using the method of
    (i) Laspeyre's (ii).Paasche's (iii). Marshall-Edgeworth (iv). Fisher's Ideal index number

Commodities	2010		2011	
	P_0	Q_0	P_1	Q_1
Sugar	1	6	5	8

Rice	2	7	4	7
Milk	3	8	3	6
Wheat	4	9	2	3

16. Find coefficient of rank correlation between the variables X and Y.

X	68	64	75	50	64	80	75	40	55	64
Y	62	58	68	45	81	60	68	48	50	70

17. Fit a Straight line to the following data.

X	1	2	3	4	6	8
Y	2.4	3	3.6	4	5	6

18. Solve the following Assignment Problem.

Jobs	**Machines**			
	M₁	**M₂**	**M₃**	**M₄**
J₁	14	5	8	7
J₂	2	12	6	5
J₃	7	8	3	9
J₄	**2**	**4**	**6**	**10**

SECTION C

Answer any TWO questions.   **(2 x 20 =40 marks)**

19. The following data relate to advertising expenditure and sales.

Advertising Expenditure(Rs. lakhs)	1	2	3	4	5
Sales(Rs. lakhs)	10	20	30	50	40

  (i) Find out two Regression Equations.

  (ii) Estimate the likely sales when advertising expenditure is Rs. 7 lakhs.

  (iii) Calculate the correlation between Advertising Expenditure and Sales.

	Destination

Initial Basic Solution and

		D$_1$	D$_2$	D$_3$	Supply
Origin	**O$_1$**	2	7	4	**5**
	O$_2$	3	3	1	**8**
	O$_3$	5	4	7	**7**
	O$_4$	1	6	2	**14**
	Demand	**7**	**9**	**18**	**34**

20. Obtain the Feasible cost of a

Transportation Problem by Using
   (i) North-West Corner Rule, **(ii)** Least Cost method and **(iii)** Vogel's Approximation Method.

21. Find the seasonal variations by the Link Relative Method to the following data

	YEAR				
QUARTER	**2006**	**2007**	**2008**	**2009**	**2010**
Spring	6.0	5.4	6.8	7.2	6.6
Summer	6.5	7.9	6.5	5.8	7.3
Autumn	7.8	8.4	9.3	7.5	8.0
Winter	8.7	7.3	6.4	8.5	7.1

22. (i) Calculate Karl Pearson's Coefficient of Skewness:

X	1	2	3	4	5	6	7
f	3	6	8	17	14	10	4

(ii) Find out Mean Deviation and Standard Deviation from the following data:

X	5	15	25	35	45	55	65
f	8	12	10	8	3	2	7

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