Exam.Code:0022
Sub. Code: 0868

2071
Bachelor of Business Administration
Second Semester
BBA-122: Business Statistics

Time allowed: 3 Hours | Max. Marks: 80

***NOTE**: Attempt <u>four</u> short answer type questions from Section–A. Attempt <u>two</u> questions each from Section B and C respectively.*

x-x-x

Section A

1. Define types of correlation.

2. On a certain day the average closing price of a group of stocks on the New York Stock Exchange is $35 (to the nearest dollar). If the median value is $33 calculate the approximate value of mode. And comment on the skewness of data.

3. The following is a set of data from a sample of n=6:
   7, 4, 9, 7, 3, 12.
   Calculate the first quartile, the third quartile , and the interquartile range.

4. Calculate trend values by method of least squares from the data given below and also estimate the sales for year 1991:

Years	1986	1987	1988	1989	1990
Sales(in crores)	12	18	20	23	27

5. For 50 students of a class the regression equation of marks in Statistics (x) on the marks in Accountancy (y) is $3y - 5x + 180 = 0$. The mean marks in Accountancy is 43 and the variance of marks in Statistics is 9/16th of the variance of marks in Accountancy. Find the mean marks in Statistics and the coefficient of correlation between marks in the two subjects.

6. Index numbers are economic barometers. Explain this statement.

(5*4=20)

Section B

7. (i) What do you understand by measures of dispersion and its measures? Discuss its uses in business management.

   (ii) The following are a sample of Motorola's stock prices in March 2007.
   20, 20.6, 19.7, 19.9, 25.1, 20.2, 20.7, 20.6, 20.8, 20.2, 20.6, 20.2
   Find the mean and the variance of the data. Also comment on the values obtained.

(7+8=15)

8. (i) Explain how statistics plays an important role in management planning and decision-making?
   (ii) Define Harmonic mean and Geometric mean. And give examples where these measures can be used.
   (iii) Discuss limitation of statistics in COVID-19 scenario. **(7+5+3=15)**

P.T.O.

9. The HRD manager of a company wants to find a measure which he can use to fix the monthly income of persons applying for a job in the production department. As an experimental project, he collected data on 7 persons from that department referring to years of service and their monthly income.

Year of service:	11	7	9	5	8	6	10
Income (1000 Rs):	10	8	6	5	9	7	11

(a) Calculate Rank correlation coefficient and interpret result.
(b) Calculate regression equation of income on years of service. **(7+8=15)**

10. A charitable organization decided to give old-age pension to people over sixty years of age. The scales of pensions were fixed as follows:

Age Group	Pension per month (Rs.)
60-65	200
65-70	280
70-75	320
75-80	360
80-85	450

The ages of 25 persons who secured the pension are as given below:
74, 62, 84, 72, 61, 83, 72, 81, 64, 71, 63, 61, 60, 67, 74, 64, 79, 73,75, 76, 69, 68, 78, 66, 67.
Calculate the monthly average pension payable per person and the standard deviation. **(15)**

Section C

11. Compute price index and quantity index numbers for the year 2005 with 2000 as base year using

Commodity	Quantity (units)		Expenditure (Rs.)	
	2000	2005	2000	2005
A	100	150	500	900
B	80	100	320	500
C	60	72	150	360
D	30	33	360	297

(i) Laspeyre's Method
(ii) Paasche's Method and
(iii) Fisher's method **(15)**

12. (i) Define Skewness and Kurtosis.
(ii) From the following data, calculate the trend values using three years moving average:

Year	1989	1990	1991	1992	1993	1994	1995	1996
Values	506	620	1036	673	588	696	1116	738

(7+8=15)

13. (i) Discuss the importance and use of weights in the construction of general price index numbers.

    (ii) Explain briefly the additive and multiplicative models of time series. Which of these models is more popular in practice and why?

(7+8=15)

14. What are the tests to be satisfied by a good index number? Examine how far they are met by Fisher's Ideal index number. **(15)**

x-x-x