Exam. Code : 108501
Subject Code : 2097

B.Com. 1st Semester

BUSINESS STATISTICS

Paper—BCG-106

Time Allowed—Three Hours] [Maximum Marks—50

Note :—Attempt any **FIVE** questions, selecting at least **ONE** question from each Section and the **fifth** question may be attempted from any section. Each question carries **10** marks.

SECTION—A

1. Define Statistics. Discuss the functions and limitations of Statistics.

2. (a) Calculate mode, given the following data-set :

Mid Value	5	15	25	35	45
Frequency	4	5	8	12	16
Mid Value	55	65	75	85	
Frequency	28	15	3	2	

(b) Explain various measures of central tendency showing their advantages and disadvantages.

SECTION—B

3. Calculate (i) quartile deviation, (ii) standard deviation of wages from the following data :

Daily Wages (in Rs.)	35–36	36–37	37–38	38–39
No. of Persons	14	20	42	54

Daily Wages (in Rs.)	39–40	40–41	41–42
No. of Persons	45	18	7

4. Calculate the coefficient of correlation by Karl Pearson's method from the following data relating to overhead expenses and the cost of production :

Overheads (In '000 Rs.)	80	90	100	110	120
Cost ('000 Rs.)	15	19	16	19	17

Overheads (In '000 Rs.)	130	140	150	160
Cost ('000 Rs.)	18	16	18	15

SECTION—C

5. What do you mean by index numbers ? Discuss its uses. Also explain the problems faced while computing index numbers.

6. Compute Fisher's ideal index number from the data given below and check whether the time reversal test is satisfied :

Commodity	Base Year		Current Year	
	Price	Quantity	Price	Quantity
A	2	7	6	6
B	3	6	2	3
C	4	5	8	5
D	5	4	2	4

SECTION—D

7. For the following series of observations, verify that the 6-yearly centred moving average is equivalent to a 7-yearly weighted moving average with weights 1, 2, 2, 2, 2, 2, 1 respectively :

Year	2000	2001	2002	2003
Sales (in lakhs)	2	4	3	6
Year	2004	2005	2006	2007
Sales (in lakhs)	7	9	4	6
Year	2008	2009	2010	
Sales (in lakhs)	7	8	10	

8. (a) Define probability. Discuss additive theorem of probability.

   (b) A test consists of five questions, and to pass the test, a student has to answer at least four questions correctly. Each question has three possible answers, of which only one is correct. If a student guesses on each question, what is the probability that the student will pass the test ?