

Roll No. ....

**12604**

**MBA 2 Yr. 1st Semester (CBCS) 2019-20  
New Scheme Examination – February, 2022**

**BUSINESS STATISTICS AND ANALYTICS**

**Paper : 19IMG21C4**

**Time : Three hours ] [ Maximum Marks : 80**

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

**Note :** Section - A is *compulsory*. Attempt *four* questions from Section-B (*one* question from each unit). All questions carry equal marks.

**SECTION – A**

1. Write short notes on the following:

- (i) Standard deviation.
- (ii) Skewness.

- (iii) Scatter diagram.
- (iv) Properties of regression.
- (v) Index number.
- (vi) Least square method.
- (vii) Sampling.
- (viii) Hypothesis testing.

**SECTION – B**

**UNIT – I**

- 2. What is the significance of measure of central tendency ? Discuss the merits, demerits & application of various measures of central tendency.
- 3. The following table gives the distribution of income of household based on below data :

Income (Rs.)	Percentage of households
Under 15,000	7.2

**UNIT - II**

15,000 – 15,999	11.7
16,000 – 16,999	12.1
17,000 – 17,999	14.8
18,000 – 18,999	15.9
19,000 – 19,999	14.9
20,000 – 20,999	10.9
21,000 – 21,999	9
21,000 & above	4

- What are the problems involved in computing standard deviation from the above data ?
- Compute a measure of dispersion.
- Would the skewness of above distribution be affected if the income of everyone was increased by a certain proportion ?

- Obtain the two lines of regression from the following data and estimate the blood pressure of a person aged 20 years on the basis of this regression equation? Discuss.

Age (Years)	56	42	72	39	63	47	52	49	40	42	68	60
Blood Pressure	127	112	140	118	129	116	130	125	115	120	135	133

- Explain correlation and its types. Discuss the properties of correlation coefficient. What is probable error or correlation coefficient ?

**UNIT - III**

- Below are given the figures of production ('000 tonnes) of a coal mine.

Year	2002	2004	2005	2006	2007	2008	2011
Production ( '000 qtls)	80	95	104	93	100	110	108

**UNIT – IV**

- (a) Fit a straight line trend by the method of least square and calculate trend values.
- (b) What is the monthly increase in production of coal ?
- (c) Estimate the trend.

7. From the following data, calculate Fishers Ideal Index and prove that it satisfies both the time reversal and factor reversal tests.

Commodity	Price (in Rs.)		No. of Units	
	Base Year	Current Year	Base Year	Current Year
A	6	8	10	12
B	10	10	5	8
C	5	7	8	10
D	15	20	12	15
E	20	25	15	10

8. The following data represent the number of units of production per day turned out by 5 different workers using 4 different types of machines.

Workers	Machine Type			
	A	B	C	D
1	44	38	47	36
2	46	40	52	43
3	34	36	44	32
4	43	38	46	33
5	38	42	49	39

- (a) Test whether the mean productivity is the same for the different machine types.
- (b) Test whether the 5 men differ with respect to mean productivity.

9. What do you understand by business analytics ?  
Explain its types and application of business analytics  
in today's world.

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