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**BBA (2014 to 2017)/BRDM/B.SIM (2014 & Onwards) (Sem.-3)****BUSINESS STATISTICS****Subject Code : BBA-304****M.Code : 70625****Time : 3 Hrs.****Max. Marks : 60****INSTRUCTIONS TO CANDIDATES :**

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** consists of **FOUR** Sub-sections : Units-I, II, III & IV.
3. Each Sub-section contains **TWO** questions each, carrying **TEN** marks each.
4. Student has to attempt any **ONE** question from each Sub-section.

**SECTION-A****1. Answer briefly :**

- a. What are the applications of harmonic mean?
- b. What is the interpretation of  $R^2$  in correlation?
- c. What is an index number?
- d. What is an experiment? Elaborate with suitable example.
- e. What is a random variable? Elaborate with an example.
- f. What is the standard error of estimate? How it is computed?
- g. What are the different types of data?
- h. What is difference between regression and correlation?
- i. What is joint probability?
- j. What is frequency distribution?



## SECTION-B

### UNIT-I

2. Following data exhibits the sample of room occupancy of a mid-sized hotel for last 15 days. Compute the mean and variance of the room occupancy

X	44	36	23	42	33	45	24	42	29	31	39	46	31	38	29
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3. What are the different measures of variation? Discuss with the help of suitable example.

### UNIT-II

4. Following is the data of a firm for output of steel in tons and number of workers employed. Please investigate if the production is dependent on the number of employees. If so, what is the proportion of production dependent upon the number of employees?

<b>Outputs in Tons</b>	46	88	72	84	66	90	48	84	58	62	78	92	62	76
<b>Number of workers employed</b>	14	19	15	18	19	20	12	16	15	15	18	19	14	17

5. Use the data given in Q4 and find the correlation between Output of steel and number of workers employed? Also, compute the coefficient of determination and interpret the results.

### UNIT-III

6. What is an index number? How weighted and unweighted price indexes are computed? What are the applications of price index in business?
7. What are different types of variations in time series data? What is a trend line?

### UNIT-IV

8. At a hotel, a social worker gathers the following data. Of those visiting the hotel, 59% were men, 32 were alcoholics, 21% were male alcoholics. What is the probability that a random male visitor to the hotel is an alcoholic?
9. During a study of auto accidents, the highway authority found that 60% of accidents occur at night, 52% are alcohol related, and 37% occur at night and alcohol related.
- a) What is the probability that an accident was alcohol related, given that it occurred at night?
- b) What is the probability that occurred at night, given that it was alcohol related.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**