

Roll No.

Total No. of Pages : 03

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BBA (2012 & Onward Batches)
BRDM/Bachelor in Service Industry Management (SIM) (2014 & Onwards)
(Sem.-3)

BUSINESS STATISTICS

Subject Code : BBA-304

Paper ID : [C1167]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTIONS-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 Write briefly :

- a. Range
- b. Value index numbers
- c. Event and Experiment
- d. Compare primary and secondary data.
- e. State addition and multiplication theorem of probability.
- f. State components of time series.
- g. Compute harmonic mean for the following data:

Class Interval	10-20	20-30	30-40	40-50	50-60
Frequency	4	6	10	7	3

- h. A person is known to hit the target in 3 out of 4 shots, whereas another person is known to hit the target in 2 out of 3 shots. Find the probability of the target being hit at all when they both try.
- i. Differentiate between correlation and regression analysis.
- j. What is meant by linear and non-linear correlation?

SECTION-B

UNIT-I

2. Calculate arithmetic mean, median and mode from the following data :

Variable	Frequency	Variable	Frequency
10-13	8	25-28	54
13-16	15	28-31	36
16-19	27	31-34	18
19-22	51	34-37	9
22-25	75	37-40	7

3. Calculate coefficient of quartile deviation and coefficient of variation from the following data :

Marks	No. of students
Below 20	8
Below 40	20
Below 60	50
Below 80	70
Below 100	80

UNIT-II

4. The following data relates to the age of employees and number of days they were reported sick in a month

Employees	1	2	3	4	5	6	7	8	9	10
Age(X)	30	32	35	40	48	50	52	55	57	61
Sick days(Y)	1	0	2	5	2	4	6	5	7	8

Calculate Karl Pearson's coefficient of correlation and interpret it.

5. The following data contains the scores obtained by 9 salesmen of a company in an intelligence test and their weekly sales in thousand rupees:

Salesman intelligence	A	B	C	D	E	F	G	H	I
Test scores	50	60	50	60	80	50	80	40	70
Weekly sales	30	60	40	50	60	30	70	50	60

- a) Obtain the regression equation of sales on intelligence test scores of the salesmen.
- b) If the intelligence test score of a salesman is 65, what would be his expected weekly sales?

UNIT-III

6. Construct a Fisher's ideal index from the following data and show that it satisfies time reversal and factor reversal tests :

Items	2002		2003	
	p_0	q_0	p_1	q_1
A	10	40	12	45
B	11	50	11	52
C	14	30	17	30
D	8	28	10	29
E	12	15	13	20

7. The data below given the tourists arrivals (in millions) during 1997 to 2003 India :

Years	1997	1998	1999	2000	2001	2002	2003
Tourist arrivals(in millions)	18	20	23	25	24	28	30

Fit a straight line trend by the method of least squares and estimate the number of tourists that would arrive in the year 2007.

UNIT-IV

8. Discuss classical approach, relative frequency approach and subjective approach to probability in detail. 10
9. A manufacturing firm produces steel pipes in three plants with daily production volumes of 500, 1000 and 2000 units respectively. According to past experience, it is known that the fraction of defective outputs produced by the three plants are respectively .005, .008 and .010. If a pipe is selected from a day's total production and found to be defective, find out :
- a) From which plant the defective pipe comes?
- b) What is the probability that it came from the first plant?

8+2