

MBA I Semester Supplementary Examinations December/January 2017/2018

BUSINESS STATISTICS

(For students admitted in 2014, 2015 & 2016 only)

Time: 3 hours

Max. Marks: 60

SECTION – A

(Answer the following: (05 X 10 = 50 Marks)

(Statistical tables is permitted in the examination hall)

- 1 The distribution of marks of 1628 students of an entrance examination is given below.

Marks:	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency:	110	240	360	540	210	90	78

Find mean, median and mode.

OR

- 2 The runs scored by two players in 6 test matches are given below.

Player A:	65	100	140	0	40	10
Player B:	75	80	80	90	80	75

Calculate coefficient of variation and suggest who is a consistent player.

- 3 Find the pearson's correlation coefficient between ages of software professionals and their monthly salaries from the following data.

Age:	30	36	35	29	26	39	33	28
Salary (Rs in 000s):	62	54.5	67	64.5	55	58	54.5	45

OR

- 4 The data regarding shelf space available in 12 shops selling bakery items and snacks and the weekly sales (Rs in 000s) is given below.

Shelf space (in cubic feet):	4	9	14	9	4	9	14	19	19	19
Sales (Rs in 000s):	80	95	115	120	110	130	135	145	130	165

(i) Find the regression line of sales on shelf space.

(ii) Calculate sales when shelf space is 10 cubic feet.

- 5 The students who come for interview are either engineering graduates or science graduates. Out of 900 students who come for interview 600 are engineering graduates. An engineer clears the interview with probability 0.3 and a science graduate with probability 0.15.

(i) Find the probability that a student attending the interview clears it.

(ii) A student has cleared the interview. What is the probability that he is an engineering graduate?

OR

- 6 A top business school wants to admit only 2% of the students who attend interview. It is found that marks of interview follow a normal distribution with a mean of 70 and standard deviation of 12. What mark should a student get in interview so that he gets admission?

- 7 60% of people who were served in Delhi asserted that corruption is the most important issue affecting India's progress. 55% of 150 people in Chennai made the same assertion. Test whether there is any difference in the perception of people in Delhi and Chennai regarding corruption in India at 5% significance level.

OR

- 8 The average daily wages of 15 labourers engaged in construction sector in Tamilnadu is Rs. 300 with standard deviation of Rs. 25. The average daily wages of 10 labourers engaged in construction in Karnataka is Rs. 325 with a standard deviation of Rs. 35. Test whether the daily wages in the two states is different at 5% significance level.

Contd. in page 2

- 9 The contingency table gives the number of defective parts produced during various shifts in a factory.

Shift	Good	Defective
Morning	952	48
Noon	898	62
Night	840	60

Test whether the number of defective parts and the production shift are independent at a significance level of 5%.

OR

- 10 A small public sector bank merged with a large public sector and some of the employees of the small bank were not satisfied and their satisfaction level is measured in 0 – 100 point scale. The satisfaction level of 10 employees before and after the merge were measured.

Before	74	77	68	68	47	81	44	68	81	72
After	77	72	76	65	42	71	52	64	70	77

Test whether the merger has decreased the satisfaction level of employees of the smaller bank. Take $\alpha = 0.05$.

SECTION – B

(Compulsory question, 01 X 10 = 10 Marks)

- 11 **Case Study:**

A chain of restaurants in a city wants to compare 3 of its restaurants regarding the service time per customer. One of the owners visited the 3 restaurants during the peak hours and noted the service time for 5 customers in each of the three restaurants.

Table: Service time in minutes

Restaurant 1	Restaurant 2	Restaurant 3
3	3	2
4	4	3.5
5.5	5.5	5
3.5	2.5	6.5
4	3	6

The problem is to test whether the average service time in 3 restaurants are significantly different.
