Code: 14E00105

MBA I Semester Supplementary Examinations June/July 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)

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1   The number of accidents in a highway between Nellore and Chennai on 20 days are:
      1, 0, 4, 2, 3, 5, 6, 8, 5, 6, 8, 5, 6, 9, 5, 7, 10, 5, 7 and 11.
      Fit the mean, median, mode, Q1, P10. Which measure of central tendency can be applied?

OR

2   In a coaching centre, three students Alice, Arun and Anil scored the following marks in 5 tests before
      the final examination.

Alice	:	88	92	91	79	89
Arun	:	90	92	88	92	87
Anil	:	90	89	93	79	88

Which student is most consistent?

3   The director of a business school has a suspicion that the students coming later answer better since
      they were able to anticipate the questions based on their discussion with their friends who attended
      interview before them. The scores of 15 candidates in a day is given below.

Candidate number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Score	65	60	50	60	65	68	71	72	76	74	77	80	82	81	70

Test whether there is correlation between the order in which the students appear for interview and
their mark.

OR

4   The following table provides data on the time spent in watching a cricket match before the exam and
      the exam marks on the next day.

Time in minutes	50	70	20	50	80	0	30	60	70	30	10
Exam mark	76	65	82	68	61	92	73	58	74	77	85

Find the regression time of exam score on time spent. Also find the exam mark for 25 minutes of time
spent in watching cricket.

5   Cricket, Hockey and Football are played in a city. 40% play cricket, 32% play hockey and 28% play
      football. 16% play both cricket and hockey. 10% play both cricket and football. 8% play both hockey
      and football while 4% play all the three. Find the following probabilities:
      (i) A person plays at least one of the three.
      (ii) Plays only football.
      (iii) Plays either cricket or football.

OR

6   (a)   List the properties of a binomial distribution.
      (b)   It is found that 40% of students who availed education loan do not repay. In a random sample of
              10 students who got education loan, find the probability that: (i) Three students do not repay. (ii) None
              of them repay the loan.

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7   The average cost of a two bedroom flat in anantapur is found to be 35 lakhs. However, a recent sample of 10 flats had a mean of 39 lakhs with a standard deviation of 5 lakhs. Test whether the average cost of two bed room flat has increased recently in anantapur at significance level of 0.05.

OR

8   When the Finance Minister of India said that Indian Economy will be sluggish at least for 6 months, 65% of 200 stocks declined in NSE and 70% of 300 stocks declined in BSE. Test whether the proportion of declining stocks is more in BSE than in NSE at a significance level of 0.05.

9   A company wants to test whether the preference by customers for its product and the income level of customers are independent. The company surveyed 200 persons and arrived at the following table.

Purchase Behavior	Income group		
	0 – 20000	20000 – 40000	>40000
Frequent	30	20	20
Occasional	60	10	10
No purchase	10	30	10

Test whether the preference for the product and income level are independent at a significance level of 0.05.

OR

10   The problem solving ability of students is found to improve after getting MBA degree. The problem solving ability of 10 students (1-low and 5-high) are noted before and after getting MBA degree.

Before	5	4	5	3	2	3	5	3	4	3
After	4	5	4	4	1	5	5	4	5	5

Test whether there is any improvement in the problem solving ability of students due to MBA degree. Take $\alpha = 0.05$.

SECTION – B
(Compulsory question, 01 X 10 = 10 Marks)

11   **Case Study:**

A company is trying three different training methods to its new employees for enabling them to get familiarized with the company environment and learn the ways the various departments of the company are working. It collected the data regarding the time taken by employees to complete the training methods.

Method 1	Method 2	Method 3
16	23	19
19	28	25
20	19	20
23	22	17
12	18	16

Test whether the three methods are equally effective at a significance level of 0.05.

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