# MBA \& MBA (Finance) I Semester Supplementary Examinations June/July 2018 STATISTICS FOR MANAGERS 

(For students admitted in 2017 only)
Time: 3 hours
Max. Marks: 60

## SECTION - A

(Answer the following: ( $05 \times 10=50$ Marks)

1 Calculate arithmetic mean for the following data by short-cut method:

| Marks | $0-10$ | $10-20$ | $20-30$ | $30-40$ | $40-50$ | $50-60$ | $60-70$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Frequency | 4 | 8 | 11 | 15 | 12 | 6 | 2 |
| OR |  |  |  |  |  |  |  |

2 Find mode from the following data:

| Monthly salary | $1000-1500$ | $1500-2000$ | $2000-2500$ | $2500-3000$ | $3000-3500$ | $3500-4000$ | $4000-4500$ | $4500-5000$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. of <br> employees | 3 | 8 | 16 | 25 | 18 | 7 | 5 | 2 |

Obtain the regression lines associated with the following data by the method of least squares.

| $x$ | 1 | 2 | 3 | 4 | 5 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $y$ | 166 | 184 | 142 | 180 | 338 |

OR
4 Given that $x=4 y+5$ and $y=k x+4$ are the regression lines of $x$ on $y$ and $y$ on $x$ respectively. Show that $0 \leq k \leq 0.25$. If $\mathrm{k}=0.1$ actually, find the means of the variables $x$ and $y$ and their coefficient of correlation.

55 unbiased coins were tossed simultaneously then what is the probability of getting: (i) Exactly 3 heads. (ii) At least 3 heads. (iii) Zero heads. (iv) At most 2 heads.

## OR

Fit a binomial distribution to a following data and fore cast theoretical or expected frequencies.

| $x$ | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $f$ | 2 | 10 | 25 | 42 | 20 | 11 | 3 |

Distinguish between large and small or exact tests.
OR
The average hourly wage of a sample of 150 workers in plant A is Rs. 256 with a standard deviation of Rs. 1.08. Average wage of a sample of 200 workers in plant B Rs. 2.87 with a standard deviation of Rs. 1.28 can be applicant safely. Assume that the hourly wages paid by plant $B$ is higher than plant $A$.

9 The following data from a study in which random samples of the employees of three government agencies were asked questions about their pension plan.

|  | Agency I | Agency II | Agency III |
| :---: | :---: | :---: | :---: |
| For the pension plan | 67 | 84 | 109 |
| Against the pension plan | 33 | 66 | 41 |

Use the 0.01 level of significance to test the null hypothesis that the actual proportions of employees favoring the pension plan are the same.
OR

A die 15 thrown 60 times with the following results:

| Face | 1 | 2 | 3 | 4 | 5 | 6 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Frequency | 8 | 7 | 12 | 8 | 14 | 11 |

Test at $5 \%$ level of significance, if the die is honest.

## SECTION - B

(Compulsory question, $01 \times 10=10$ Marks)

## Case StudyIProblem:

Prepare the analysis of variance for the following data relating to per acre production data of wheat.

| Type of land | Type of seeds |  |  |
| :---: | :---: | :---: | :---: |
|  | A | B | C |
| W | 6 | 5 | 5 |
| X | 7 | 5 | 4 |
| Y | 3 | 3 | 3 |
| $Z$ | 8 | 7 | 4 |

