

**M.B.A. (GEN.) (2012 COURSE) / M.B.A. (HR) (2012 COURSE) /
M.B.A. (IT) (2012 COURSE) SEMESTER - I / M.B.A. (FM)
SEMESTER - I (2013 COURSE)(CHOICE BASED CREDIT
SYSTEM) : SUMMER - 2018
SUBJECT : STATISTICAL & MATHEMATICAL TECHNIQUES**

Day : **Wednesday**
Date : **02/05/2018**

S-2018-1862

Time : **10.00 AM TO 01.00 PM**
Max. Marks : 100

N.B.:

- 1) Attempt **ANY FOUR** questions from Section – I and **ANY TWO** questions from Section – II.
- 2) Answer to both the sections should be written in the **SAME** answer book.
- 3) Use of non programmable **CALCULATOR** is allowed.
- 4) Figures to the right indicate **FULL** marks.
- 5) Graph paper will be provided if necessary.

SECTION – I

- Q.1 a)** Define Central Tendency and explain various measures of central tendency. **[08]**
- b)** Explain the various methods that are used in the collecting of primary data. **[07]**

- Q.2 a)** Draw Histogram and frequency polygon for the following data: **[08]**

Classes	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70	70 – 80
Frequency	8	20	30	50	10	8	5

- b)** Three cards are drawn at random from a well shuffled pack of 52 cards. Find **[07]**
the probability that the three cards drawn contain:
- i)** 2 Kings and 1 Ace.
 - ii)** At least 2 red cards.

- Q.3 a)** Given below is the information about advertising and sale. **[08]**

	Advertise Expenditure (Rs. Lakh)	Sale (Rs. Lakh)
Mean	10	90
Variance	09	144

Correlation coefficient = 0.80.

Obtain the regression equation of sales on advertisement expenditure. Also obtain sales when advertising expenditure is Rs. 15 lakh.

- b)** A manufacturer of safety pins knows that 2% of his products are defective. If **[07]**
he sells them in a box of 100 pins and guarantees that not more than 5 pins will be defective in a box. Find the number of boxes in a consignment of 100 boxes that will be rejected by the customer as they fail to meet the guaranteed quality.

- Q.4** The scores of two batsmen A and B in ten innings during a certain season are: **[15]**

A	32	28	47	63	71	39	10	60	96	14
B	19	31	48	53	67	90	10	62	40	80

Using coefficient of variation find which of the two batsmen A or B is more consistent in scoring.

P.T.O.

- Q.5** Write short notes on **ANY THREE** of the following: [15]
- Measures of Dispersion
 - Types of Correlation
 - Frequency distributions
 - Decision Tree Analysis
 - Methods of classification and tabulation of data

SECTION – II

- Q.6 a)** Calculate the mean and mode for the following data: [10]

Marks (below)	10	20	30	40	50	60	70	80
No. of students	4	10	14	20	25	35	40	52

- b)** Calculate mean deviation and its coefficient from the median for the following data: [10]

Marks less than	10	20	30	40	50	60	70	80
No. of students	5	13	20	32	60	80	90	100

- Q.7** For the following data: [20]

X	78	89	96	69	59	79	68	61
Y	125	137	156	112	107	136	123	108

Find :

- Coefficient of correlation between x and y.
 - Probable error.
 - Coefficient of determination.
 - Two regression lines.
- Q.8 a)** The customer accounts at a certain departmental store have an average balance of Rs. 480 and a standard deviation of Rs. 160. Assuming that the account balances are normally distributed [10]
- What proportion of the accounts is between Rs. 400 and Rs. 600?
 - What proportion of accounts is between Rs. 240 and Rs. 360?
- b)** In a bolt factory machines A, B and C produce 25%, 35% and 40% of the total number of items of a factory respectively. The percentages of defective outputs of these machines are 3%, 4%, 5% respectively. If an item is selected at random from total output and is found to be defective. What is the probability that it was manufactured by machine A, B and C? [10]

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