

**B.B.A. /B.B.A. (B.P.M.) SEM – I (CBCS - 2018 Course) : SUMMER -  
2019**

**SUBJECT : FOUNDATION OF MATHEMATICS AND STATISTICS**

Day : Saturday  
Date : 27/04/2019

**S-2019-1939**

Time : 10.00 AM TO 01.00 PM  
Max. Marks : 60

**N.B.**

- 1) Attempt any **THREE** questions from Section – I and any **TWO** questions from Section – II.
- 2) Figures to the right indicate **FULL** marks.
- 3) Use of non-programmable **CALCULATOR** is allowed.
- 4) Use graph paper **WHEREVER** necessary.
- 5) Answers to both the sections should be written in **SAME** answer book.

**SECTION – I**

**Q.1 a)** Define the term 'Statistics' with their scope. **(06)**

**b)** In how many ways can we select an ace or a heart card from a well shuffled pack of playing cards? **(06)**

**Q.2 a)** Find  $AB+BA$  **(06)**

$$\text{If } A = \begin{bmatrix} 3 & -2 & 3 \\ 2 & 6 & 2 \\ -1 & 0 & 2 \end{bmatrix}, B = \begin{bmatrix} 3 & -2 & 3 \\ 6 & 2 & 3 \\ 2 & -1 & -1 \end{bmatrix}$$

**b)** Draw frequency curve for the information provided : **(06)**

No. of Defective Bulbs ( $x$ )	Number of Boxes ( $f$ )
1–5	4
6–10	14
11–15	10
16–20	25
21–25	16
26–30	8
31–35	3

**Q.3 a)** How much  $4\frac{1}{2}\%$  stock at ₹ 90 can be purchased by selling ₹ 4,500, 4% stock at ₹ 80? Which stock yields more income. **(06)**

**b)** The compound interest on a certain sum of money for two years is ₹ 920.25 and the simple interest is ₹ 900.00. Find the sum and the rate of interest. **(06)**

**Q.4 a)** A trader gives 5% discount on the marked price. What will be the marked price of an article whose cost price is ₹ 712.50 in order to gain  $33\frac{1}{3}\%$  **(06)**

**b)** Elaborate importance of diagrammatic and graphical representation of data. **(06)**

**P.T.O.**

- Q.5** Write short notes on ANY TWO: (12)
- a) Population and sample
  - b) Brokerage
  - c) Properties of determinants

**SECTION – II**

- Q.6** a) Solve the linear system (06)
- $$\begin{aligned} -4x - 3y &= 12 \\ 6x + 4y &= 12 \end{aligned}$$
- b) Suresh has invested ₹ 13568 in 7% shares at ₹ 106 and ₹ 12648 in 11% shares at ₹ 124. How much income would he get in all. (06)

- Q.7** a) Find the value of the determinant (06)

$$\begin{vmatrix} 2 & 5 & 4 \\ 1 & 4 & 3 \\ 6 & 8 & 10 \end{vmatrix}$$

- b) Describe significance of descriptive and inferential statistics in business. (06)
- Q.8** a) A, B and C started a business sharing profit and loss in the ratio of their capitals. (06)  
The ratio of capitals of A and B is 8:7 and the ratio of capitals of C and B is 9:8. At the end of the year A received ₹ 520 more than B, as his share of profit. Find the share of profit of each partner.
- b) Solve for i)  ${}^3C_2$       ii)  ${}^7P_3$       iii)  ${}^4C_2 + {}^7P_4$  (06)

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