

B. B. A./B.P.M SEM – II (CBCS – 2018 COURSE) : SUMMER – 2019  
SUBJECT : BUSINESS STATISTICS

Day : Wednesday  
Date : 24.04.19

Time : 2.00 PM To 5.00 PM,  
Max. Marks : 60

S2019-1943

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) Answers to both the sections should be written in **SAME** answer books.
- 4) Use of non-programmable **CALCULATOR** is allowed
- 5) Use of graph paper **WHEREVER** necessary

**SECTION – I**

- Q. 1** a) Define probability and conditional probability. Explain both the concepts with the help of suitable examples. (06)
- b) A bag contains 6 white, 4 red and 10 black balls. Two balls are drawn at random. Find the probability that both the balls are black. (06)

- Q. 2** Calculate arithmetic mean and median for the following frequency distribution: (12)

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of Students	6	5	8	15	7	6	3

- Q. 3** a) In a sample survey of 2500 students 1000 liked Economics, 1750 liked Statistics and 600 liked both Economics and Statistics. Find whether linking in two subjects Economics and Statistics is associated or not? (06)
- b) Calculate Modal Height by using following data: (06)

Height	10-15	15-20	20-25	25-30	30-35	35-40	40-45
Frequency	4	12	20	18	16	13	10

- Q. 4** Calculate Karl Pearson's coefficient of correlation from the following data, using 20 as working mean for price and 70 as the working mean for demand: (12)

Price	14	16	17	18	19	20	21	22	23
Demand	84	78	70	75	66	67	62	58	60

- Q. 5** Write short notes on **ANY TWO** of the following: (12)

- a) Association of attributes
- b) Mutually exclusive and exhaustive events
- c) Importance of statistics in business

P. T. O.

**SECTION – II**

**Q. 6** The following table gives the aptitude scores and productivity indices of 10 workers selected at random: (12)

Aptitude Score	60	62	65	70	72	48	53	73	65	82
Productivity Index	68	60	62	80	85	40	52	62	60	81

Estimate:

- i) Productivity index of a worker whose test score is 92.
- ii) The test score of a worker whose productivity index is 75.

**Q. 7** In a bolt factory, machines A, B, C manufacture respectively 25 %, 35 % and 40 % of the total of their output 5, 4, 2 percent are known to be defective bolts. A bolt is drawn at random from the product and is found to be defective what are the probabilities that was manufactured by: (12)

- i) Machine A    ii) Machine B or C

**Q. 8** An association doing charity work decided to give old age pension to people of 60 years and above age. The scales of pension were fixed as follows: (12)

Age Group	60-65	65-70	70-75	75-80	80-85	85 -100
Pension per Month (Rs.)	400	500	600	700	800	1000

The ages of 30 persons who secured the pension right are given below:

62	65	68	72	75	77	82	85	90	78
75	61	60	68	72	76	79	80	82	68
75	94	98	73	77	68	65	71	89	78

Calculate monthly average pension payable and standard deviation.

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