

S.D.E.

**B.B.A. (2006 COURSE) SEM- III : WINTER - 2017**  
**SUBJECT : BUSINESS STATISTICS - II**

Day : **Wednesday**  
Date : **20/12/2017**

Time : **10.00 AM TO 1.00 PM**  
Max. Marks : 80

**W-2017-4105**

**N.B.:**

- 1) Attempt **ANY FIVE** questions from Section – I and **ANY TWO** questions from Section – II.
- 2) Answer to both the **SECTION** should be written in **SEPARATE** answer books.
- 3) Figures to the right indicate **FULL** marks.

**SECTION - I**

**Q.1** Fit a trend line of the form  $Y = a + bX$  to the following data: **[10]**

X	2	4	6	8	10	12
Y	5	9	13	17	21	25

Also estimate X when  $Y = 37$ .

**Q.2** Three cards are drawn from a well shuffled pack of 52 playing cards. What is the probability that: **[10]**

- a) all the three cards belong to same suit?
- b) two cards are spade cards and 1 card is heart card?

**Q.3** The mean of binomial distribution is 9 and standard deviation is 4. Find: **[10]**

- a)  $P(X \leq 2)$
- b)  $P(X > 2)$

**Q.4** Explain various sampling techniques. **[10]**

**Q.5** What is hypothesis? Explain the procedure of testing a hypothesis. **[10]**

**Q.6** Write short notes on **ANY TWO** of the following: **[10]**

- a) Association of attributes
- b) Type I and type II error
- c) Poisson distribution and its applications

**SECTION - II**

**Q.7** From the following information, find: **[15]**

- a) regression lines.
- b) height of a student when weight is 78 kg.
- c) weight of a student when the height is 73 inches.

Height (inches)	60	62	72	69	74	68	63	70
Weight (kgs)	54	70	66	54	68	75	66	71

**P.T.O.**

- Q.8** Mr. Dhirubhai wants to construct a hotel in Pune. He wishes to build one of the three types of hotels. There will be 50, 100 and 150 rooms respectively in the three hotels which is calculated depending upon the demand for the rooms. The demands are categorized as low, medium and high. Depending upon these various demands, he has made some preliminary assessment of his net profits and possible losses (in thousands of rupees) for these various types of hotels. The pay – offs are shown in the following table: [15]

No. of rooms	States of nature		
	Demand for rooms		
	Low	Medium	High
50	25	35	50
100	-10	40	70
150	-30	20	100
Demand probability	0.25	0.35	0.40

Which hotel should Mr. Dhirubhai build so as to earn maximum?

- Q.9** Find the number of ways of forming a committee of 4 persons out of 10 professors, 7 clerks and 3 peons so that the committee contains: [15]
- at the most two Professors.
  - at the most one peon.
  - exactly one clerk.

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