

Seat No.	
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**B.B.A. (Part - II) (Semester - IV) Examination, May - 2017**  
**STATISTICAL TECHNIQUES FOR BUSINESS (Paper - II)**  
**Sub. Code : 43947**

**Day and Date : Thursday, 04 - 05 - 2017**

**Total Marks : 40**

**Time : 12.00 noon to 02.00 p.m.**

- Instructions :**
- 1) All questions are compulsory.
  - 2) Figures to right indicate full marks.
  - 3) Use of non programmable calculator is allowed.

**Q1) Attempt any two:**

**[14]**

- a) Define:
- i) Sample Space
  - ii) Event

A card is drawn from a pack. Find the probability that it will be

- i) club or a picture.
  - ii) Picture or black card.
- b) Define Fisher's price and quantity index numbers. Calculate Laspeyre's and Paasch's price index from the following data.

Commodity	Base year		Current year	
	Price	quantity	price	quantity
A	4	21	8	44
B	5	26	6	35
C	7	42	5	32
D	4	30	4	48

- c) What is a control chart? How it is constructed.

**Q2) Attempt any two:**

- a) Explain secular trend.

Calculate progressive averages for the data Plot the original values with trend values.

Mean	1951	1952	1953	1954	1955	1956	1957	1958
Range	77	88	94	85	91	98	90	87

- b) What is index number. State the uses of index numbers.

Compute price index number by

- i) simple aggregate method  
ii) average of price relative method

Commodity	Rice	Wheat	Sugar	Oil
Price in (Rs.) 2009	25	25	40	100
Price in (Rs.) 2011	40	35	42	120

- c) State multiplication law of probability for any two events. An urn contains 8 white 3 red balls. If two balls are drawn at random without replacement, find the probability that

- i) both are red  
ii) one of each color.

- d) Explain the construction of the control chart for number of defectives i.e. np-chart. In a certain sampling inspection, the number of defectives found in 12 samples of 100 each are given below.

14, 18, 13, 17, 21, 10, 18, 17, 22, 15, 14, 12

Construct a suitable control chart and state whether the process is in control or not.

Q3) Attempt any two:

- a) A coin is tossed three times. Write down the sample space. What is the probability of getting:
  - i) two heads
  - ii) at least two heads
- b) Write note on cyclic variation and irregular variation.
- c) What is Statistical quality control? State its utility in industry.

