



# AJEENKYA

## D Y PATIL UNIVERSITY

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### End Term Examination (December 2019)

School: School of Management

Program: MBA Program BIS & MC

Course: Quantitative Methods

Course Code: MGT563

Semester: I

Max Marks: 50 Marks

Duration: 2 Hours

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Answer **Any five** questions  
All questions carry equal marks

1. (a) There are three bags containing some balls as follows

Bag (A)= 3 red and 7 black

Bag (B)=6 red and 4 black

Bag (C)=8 red and 2 black

A ball is drawn first from the bag A. Another ball is drawn from the bag B if the first one was red or from the bag C if the first one was black

Find the probability that

- (i) Ball drawn from bag A was red
- (ii) Ball drawn from bag B was red
- (iii) Ball drawn from C was red

(b) If 3 percent of the electric bulbs manufactured by a company are defective, find the probability that in a sample of 100 bulbs, exactly five bulbs are defective by applying most suitable theoretical distribution.

2. A department store, A, has four competitors: B,C,D, and E. Store A hires a consultant to determine if the percentage of shoppers who prefer each of the five stores is the same. A survey of 1100 randomly selected shoppers is conducted,

and the results about which one of the stores shoppers prefer are below. Is there enough evidence using a significance level  $\alpha = 0.05$  to conclude that the proportions are really the same? (C.V is 9.488)

Stores	A	B	C	D	E
No. of Shops	264	234	204	190	210

3. From the following data, find out whether there is a significant difference in the mean yields of the different samples due to the soil variable. (C.V is 8.85 at 5% level)

Soil	Samples			
	I	II	III	IV
A	15	18	25	24
B	30	27	27	19
C	25	30	15	20

4. The table below shows the height, X, in inches and the pulse rate, Y, per minute, for 9 people. Find the correlation between height and the pulse rate, and interpret the results.

X	68	72	65	70	62	75	78	64	68
Y	90	85	88	100	105	98	70	65	72

5. The sales data of an item in different shops before and after a special promotional campaign. Apply the appropriate test and state whether the special promotional campaign has significant impact on sales. (C.V is 2.015 at 5 % level.)

Sales before promotion	52	28	31	48	50	42
Sales after promotion	58	29	30	55	56	45

6. What is Hypothesis and explain its various steps?

7. From the following data given below,

(i) Calculate the regression coefficients

(ii) Calculate the regression line for Y on X,

(iii) Estimate the sales when expenditures on advertisement is Rs.15000

Expenditures on Advertisement "X" (in Thousand Rs.)	11	7	9	5	8	6	10
Sales Volume "Y" (in Lakh Rs.)	10	8	6	5	9	7	11