# JAIPURIA

## JAIPURIA INSTITUTE OF MANAGEMENT, NOIDA

## POST GRADUATE DIPLOMA IN MANAGEMENT

#### FIRST TRIMESTER (BATCH 2017-19)

## END TERM EXAMINATIONS

#### SET-A

Course Name	Quantitative Analysis for Management-I	Course Code	OP101
Max. Time	2 hours	Max. Marks	40
	*		

### Instructions: Attempt all the questions. Marks are indicated against each question.

- 1. A leading consumer electronic company has 125 retail outlets in the country. The company spent heavily on advertisement in the previous year. The company also reworked on pricing of the product. The company management wants to understand the impact of these variables on the demand of the product. Based on the regression output given below.
  - a) Identify the dependent and independent variables and draw appropriate hypothesis for the purpose defined. (2.5)

b)	Establish the regression model.	(2)
c)	Interpret the values of R square.	(1.5)
d)	Is the relationship significant between two.	(1.5)
>		(0 E)

e) Predict the demand when advertising expense is Rs. 900 and price is Rs.11. (2.5)

Regression S					
Multiple R	0.94574292				
R Square	0.894429672				
Adjusted R					
Square	0.864266721				
Standard Error	7.213257963				
Observations	10				
ANOVA			1	а	
					Significance
·	df	SS	MS	F	F
Regression	2	3085.782367	1542.891	29.65325	0.000382293
Residual	7	364.217633	52.03109		
Total	9	3450			
	Coefficients	Standard	t Stat	P-value	

		Error		
Intercept	111.6918189	23.53081475	4.746619	0.002092
	-			
Price	7.188244639	2.555330874	-2.81304	0.026032
Advertisement	0.014297061	0.011134718	1.284007	0.240002

2. A marketing research firm tests the effectiveness of a new flavoring for a leading beverage using a sample of 20 people, half of whom taste the beverage with the old flavoring and the other half who taste the beverage with the new favoring. The people in the study are then given a questionnaire which evaluates how enjoyable the beverage was. The scores are as in Figure

t-Test: Two-Sample Assuming Ec	ual Variano	æs*
e energi e estado e e estador e	New	Old
Mean	15	11.1
Variance	13.33333	18.76667
Observations	10	10
Pooled Variance	16.05	
Hypothesized Mean Difference	0	
df	18	
t Stat	2.176768	
P(T<=t) one-tail	0.021526	
t Critical one-tail	1.734064	
P(T<=t) two-tail	0.043053	
t Critical two-tail	2.100922	

- a) Verify the researcher claim that whether new drug is better than the old drug. State the hypothesis clearly. (5)
- b) Differentiate between critical approach and p value approach refereeing the values mentioned above. (5)
- **3.** "Cool-Sundae" is an ice cream parlour in NCR. The sale of ice-cream scoops follows normal distribution with the average ice-cream consumption of 300 scoops per day and standard deviation of 40 scoops. What is the probability that on a given day, the ice cream consumption will be less than 230 scoops? More than 375 scoops? Between 321 and 357 scoops.(5)

4. Following are the average stock prices of ICICI bank and HDFC bank for last one week along with its variability (Variance)?

	Average	s.d.
ICICI	450.23	100
HDFC	425.62	110

If a broker wants to buy shares of company having less relative variability in share prices, for which company should he go and why? (5)

- 5. A restaurant Galaxy International is experiencing discontentment among its regular customers. It has analyzed the situation and found out that there are primarily three factors responsible viz. food quality, services quality and ambience. By conducting an analysis, it assesses the probabilities of discontentment with the three factors as 0.50, 0.30 and 0.20 respectively. By conducting a survey among customers, it also evaluates the probabilities of a customer going away discontented on account of these factors as 0.40, 0.30 and 0.10 respectively. The restaurant manager wants to know if a regular customer is discontented, what are the chances that discontentment among its regular customersis due to ambience? (5)
- 6. The CEO of a large electric utility claims that at least 80 percent of his 1,000,000 customers are very satisfied with the service they receive. To test this claim, the local newspaper surveyed 100 customers, using simple random sampling. Among the sampled customers, 73 percent say they are very satisfied. Based on these findings, can we reject the CEO's hypothesis that at least 80% of the customers are very satisfied? Use a 0.05 level of significance.