



# AJEENKYA

## D Y PATIL UNIVERSITY

### End Term Examinations (April/May 2019)

School: School of Management

Program: MBA (BIS/SM/MaC)

Course: Statistical and Quantitative Analysis

Course Code: MGT505

Semester: II

Max Marks: 60

Duration (mins): 120 mins

Answer Any **Five**

Each question carries equal Marks

**Q.No.1.** (a) There are different types of professors are working in Ajeenkya DY Patil University. Do you think their salaries are fixed according to their gender difference and designation? In the other words how the salary differs among the professors with respect to their demographic profiles such as gender and designation (Assistant Professor, Associate Professor and Professor). From this question, you have to develop the hypothesis and identify the suitable method for testing the hypothesis. In addition, write the inference based upon the results. Here, output or results of different tests have been given below for your reference.

(i) Results of Independent sample T test [4 Marks]

#### Independent Samples Test

		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
S a l a r y	Equal variances assumed	.422	.522	-1.49	24	.147	-8555.55	5707.22	-20334.68	3223.571
	Equal variances not assumed			-1.37	13.05	.192	-8555.55	6218.30	-21984.17	4873.06

(ii) Results of ANOVA [4 Marks]

#### ANOVA- Salary and designation

	Sum of	Df	Mean	F	Sig.
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	Squares		Square		
Between Groups	2298692307.692	2	1149346153.846	9.675	.001
Within Groups	2732269230.769	23	118794314.381		
Total	5030961538.462	25			

(b) Infosys announced the dividend, do you think this announcement influences the share price of Infosys. Develop the hypothesis and write the inference. Results of Paired sample t test [4 Marks] [4 Marks]

### Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Share price before and after announcement	-45.05	33.36	7.65	-61.13	-28.97	-5.8	18	.000

**Q.No.2.** (a) A sample of 400 male students is found to have a mean height 67.47 inches. Can it be reasonably regarded as a sample from a large population with mean height 67.39 inches and standard deviation 1.30 inches? Test at 5 % level of significance (Critical value is 1.96 at 5 % level of significance). [6 marks]

(b) Inland Revenue audits 5% of all companies every year. The companies selected for auditing in any one year are independent of the previous year's selection. [6 marks]

i) What is the probability that the company will be audited exactly twice in the next 2 years?

ii) What is the exact probability that this company will be audited at least once in the next 4 years?

**Q.No.3.** The table below shows the number of absences,  $x$ , in a Calculus course and the final exam grade,  $y$ , for 7 students. Find the correlation coefficient using the suitable method and interpret your result

X	1	0	2	6	4	3	3
Y	85	80	70	55	90	90	95

**Q.No.4.** A die is thrown 132 times with following results

Number of turned up	1	2	3	4	5	6
Frequency	16	20	25	14	29	28

Is the die unbiased?

**Q.No.5.**The procedure of testing hypothesis requires researcher to adopt several steps. Describe in briefly all such steps.

**Q.No.6** What is non-parametric test and explain the features of different types of non-parametric test

**Q.No.7** Solve this transportation problem using VAM method and modified distribution method for initial feasible solution and optimum solution respectively.

	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	Supply
S <sub>1</sub>	19	30	50	10	7
S <sub>2</sub>	70	30	40	60	9
S <sub>3</sub>	40	8	70	20	18
Demand	5	8	7	14	34

**\*\*\*\*\*All the Best\*\*\*\*\***