



# AJEENKYA

## D Y PATIL UNIVERSITY

### End Term Examinations (December 2019)

School: SOM

Program: MSC. CLINICAL RESEARCH

Course: BUSINESS RESEARCH METHODS

Course Code: MGT 520

Semester: 1

MaxMarks: 70

Duration (mins): 180

Note: 1. Figures to the right indicates full marks.

Attempt any seven from the following:

(70 marks)

Q 1 Explain sampling and sampling techniques with example?

(10 marks)

Q 2 (A) Determine the sample size with an example.

(5 marks)

Q2 (B) Explain the central limit theorem with an example?

(5 marks)

Q 3. Ten unbiased coins are tossed simultaneously. Find the probability of obtaining, (i) Exactly 6 heads (ii) At least 8 heads (iii) No head (iv) At least one head (v) not more than three heads.

(10 marks)

Q4. Two different foods are tested for the difference in weight gains. A random sample of 6 mice was given food A and the other sample of 8 mice was given food B. Using U test at 5% level of significance at critical value is 8.

The weight gains were recorded as follows:

(10 marks)

Food A	17	14	15	18	12	13		
Food B	15	16	13	16	18	19	17	17

Q5. (A) Compute the trend values of semi averages from the data given below: (5 marks)

Year	2000	2001	2002	2003	2004	2005
Profit (in 000'Rs)	100	120	140	150	130	200

Q5. (B) You are given the following data:

(5 marks)

	X	Y
Arithmetic mean	36	85
Standard Deviation	11	8

Correlation coefficient between X and Y = 0.66

- (i) Find the two lines of regression
- (ii) Estimate value of X when Y= 75.

Q 6. ABC soap manufacturing company was distributing a particular brand of soap through a large number of retail shops. Before a heavy advertisement campaign, the mean sale per week per shop was 140 dozens. After the campaign, a sample of 26 shops was taken and the mean sales were found to be 147 dozens with standard deviation 16. Can you consider the advertisement effective?

At 5% level of significance with the critical value = 1.708 (10 marks)

Q7. In an industry 200 workers, employed for a specific job, were classified according to their performance and training received / not received to test independence of a specific training and performance. The data is summarized as follows:

Use chi-square test of independence at 5% level of significance (critical value = 3.84). Write your conclusion. (10 marks)

	Good performance	Not good performance	Total
Trained	100	50	150
Untrained	20	30	50
Total	120	80	200

Q8(A) Given the following information calculate: P (AUBUC),  
P(A) = 0.205, P(B)= 0.115, P(C) = 0.1, P( A intersection B)= 0.33,  
P( B intersection C) = 0.29, P( A intersection C)= 0.30,  
P( A intersection B intersection C)= 0.12

( 5 marks)

Q 8(B) Calculate five years moving averages for the following data: (5 marks)

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
X	242	250	252	249	253	255	251	257	260	265	262

\*\*\*\*ALL THE BEST\*\*\*\*