

International Islamic University Chittagong (IIUC)

Department of Economics & Banking

Final-Term Examination: Spring-2019

Program : BSS in Economics & Banking

Course Code: RES-4701

Course Title: Research Methodology

Time: 2 Hours and 30 Min.

Full Marks: 30

Answer any Three of the following questions. All parts of a question must be answered sequentially. Figures in the right margin indicate full marks.

1. (a) How would you introduce questionnaire method of data collection to your fellow mates? 02
- (b) Suppose you intend to find out the influences of smart phone in education system and you thought of collecting data through questionnaire method. Write down the merits and demerits of the mentioned method. 04
- (c) What characteristics can best explain secondary data? –Explain elaborately. 04

2. (a) Suppose a researcher wants to find out maximum time spent in a day in any of social networking sites, for instance-facebook, youtube, instagram, tweeter etc, and receive wide range of responses from 1000 respondents. To identify the answer of the research, researcher divides his sample into two age groups, below 30 and above 30. What kind of sampling is that? Provide an organized definition and its types. 03
- (b) The yields (in tons) of a paddy of 40 agricultural farms for the year 2011-2012 are given in the following two strata:
Stratum-I:
10.0, 10.8, 11.8, 12.8, 10.5, 11.0, 12.5, 11.5, 12.0, 13.5, 14.5, 13.5, 14.0, 13.8, 14.8, 15.5, 10.8, 12.8, 14.8, 15.8, 16.5, 15.6, 16.4, 14.5, 13.0
Stratum-II:
25.5, 25.0, 26.8, 27.0, 30.5, 32.2, 32.6, 38.0, 37.5, 26.8, 32.5, 40.6, 38.6, 37.6, 36.5
i. Draw a stratified random sample of size 10 by proportional allocation. 04
ii. Estimate mean yield, total yield and standard error of estimate. 03

- 3 (a) Define followings with examples: 04
i. Infinite Population
ii. Sampling frame
iii. Statistic
iv. Sample design

- (b) The profit of 30 companies during 2016-2018 are given below: 19, 48, 20,

53, 22, 49, 35, 42, 65, 48, 67, 49, 18, 16, 23, 63, 65, 55, 37, 35, 57, 69, 58, 45, 25, 24, 45, 37, 42, 39

(i) Draw a sample of size 10 using SRS.

(ii) Estimate average profit per company and its standard error.

03

03

4. (a). Give an outline about data processing.

06

(b) The average petrol consumption of existing auto engines is 10.5 km per liter. 04

An auto company decided to introduce a new six cylinder car whose mean petrol consumption is claimed to be lower than that of the existing auto engine. In order to verify company's claim, a sample of 50 new cars was randomly selected and it was found that the mean petrol consumption was 10 km per liter with a standard deviation of 3.5 km per liter. Test whether the claim of the company is acceptable at 5 % level of significance.

5. (a) Define: Null hypothesis, Test of hypothesis, Test statistics, Type-II error, level of significance. 05

(b) A machine is set to fill a small bottle with 9.0 grams of medicine. A sample of 8 bottles revealed the following amounts (grams) in each bottle. 05

9.2	8.7	8.9	8.6	8.8	8.5	8.7	9.0
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At the 0.01 significance level, can we conclude that the mean weight is less than 9.0 grams?

6. (a) Explain the significance and importance of a research report. 03

(b) Write down all necessary matters of a report elaborately. 07

7. Write notes on the followings:

05*2=10

(a) Interview method of primary data collection

(b) Non-Probability Sampling