M.Phil/IS/COM-112/19

M.Phil 1st Semester Examination, 2019

RESEARCH METHODOLOGY - II

PAPER —COM-112

Full Marks : 25

· *Time* : 2 hours

The figures in the right-hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

1. Answer any *two* questions of the following : 5×2

    (*a*) Write short notes on : $2 + 2 + 1$

       (*i*) Level of significance

       (*ii*) Critical region

       (*iii*) Power of the test.

(b) A random sample of 20 lady doctors from Midnapore has been studied regarding their systolic blood pressure. Their average blood pressure is found to be 130.05 with a standard deviation of 9.26. Test at 5% level of significance whether the blood pressure of the lady doctors in Midnapore is significantly different from the standard systolic blood pressure of 120. 5

(c) Explain the method of drawing a multi-stage random sample. State the situation where multi-stage random sampling is preferred to simple random sampling. 5

(d) What is an error ? Differentiate between sampling and non-sampling error ? 5

2. Answer any *one* question of the following : 10 × 1

   (a) (i) What do you understand by Type-I error and Type-II error in testing of hypotheses ?

       (ii) 8 boys and 8 girls are randomly selected from the post graduate level of

Vidyasagar University and their depression scores are recorded as follows :

Boys	1	2	3	4	5	6	7	8
Depression score	6	0	2	10	2	0	1	4
Girls	1	2	3	4	5	6	7	8
Depression score	2	4	0	6	12	8	10	1

Apply Mann-Whitney U-test to find whether there is any significant difference in the level of depression between boys and girls students [test at $\alpha = 0.05$]

3 + 7

(b) What is content analysis ? Discuss the process to be followed for conducting a content analysis study. Why is this called a primary data collection method even though it works on secondary data ?　　2 + 5 + 3

[*Internal Assessment* : 05 Marks]