



THE OPEN UNIVERSITY OF SRI LANKA
 POST-GRADUATE DIPLOMA IN TECHNOLOGY/
 MASTER OF TECHNOLOGY
 FINAL EXAMINATION – 2012/ 2013
 TTY7191 RESEARCH METHODOLOGY
 DURATION - THREE HOURS

DATE: 18th August 2013

TIME: 09.30 – 12.30 HOURS

Total Number of Questions = 08. Number of questions to be answered = 06.
 Answer the question 1, which is compulsory and five (05) additional questions.
 Question 1 carries thirty (30) marks and questions 02 to 08 carry fourteen (14) marks each.

01. Compulsory question

- (a) Give a scientific definition for “*Research*”. (05)
 (b) What do you understand by “*Deductive reasoning*”? (05)
 (c) Write down five (05) purposes of doing literature reviews at the stage of the formulation of a research problem. (05)
 (d) What is “*Plagiarism*”? (05)
 (e) What do you understand by the term “*Research Design*”? (05)
 (f) What is a “*Confounded Relationship*”? (05)
02. a) Karl Popper considered *falsifiability* as his criterion for demarcating science from non-science. What do you understand by “*Falsifiability*”? (02)
 b) Briefly explain all the steps of *scientific methodology* employed for conducting research. (12)
03. a) Distinguish between *qualitative* and *quantitative* approaches of research. (04)
 b) Both Historical and Qualitative Research are based on qualitative approach. However they have some different characteristics. List and explain these differences between *Historical* and *Qualitative* Research. (06)
 c) Distinguish between *correlational research* and *causal comparative research*. (04)
04. a) You wish to do a research project on “*the effect of different sewing threads on the seam strength*”. Draw a *Cause and Effect Diagram* to show all the factors which may affect seam strength. (07)
 b) State a hypothesis you would formulate for the above research project. (02)
 c) What factors do you consider as extraneous variables in the research project mentioned above? Explain why. (05)
05. a) Distinguish between “*Systematic*” and “*Random*” errors. (05)
 b) Describe the sources of the *experimental errors*, *Experimental Bias*, *Sampling error* and *Demand Characteristics*. (09)

06. a) Distinguish between “*Between Subjects Design*”, “*Within Subjects Design*” and “*Matched Subject Design*” (06)
b) What do you understand by “*Counter Balancing*”? (04)
c) What is a “*Focus group interview*”? (04)
07. a) Explain the terms “*Reliability*” & “*Validity*” with the help of a suitable example. (08)
b) Distinguish between *internal* and *external validity*. (06)
08. a) List and explain the Matters to be considered in the design of questionnaires. (06)
b) What is “*response bias*” ? (03)
c) Distinguish between a “*leading*” and a “*loaded*” question. (03)
d) What is a “*double barrelled*” question? (02)