



**MASENO UNIVERSITY**  
**UNIVERSITY EXAMINATIONS 2013/2014**

**FIRST YEAR FIRST SEMESTER EXAMINATIONS FOR THE DEGREE  
OF MASTER OF SCIENCE IN COMPUTER SCIENCE**

**(CITY CAMPUS - WEEKEND)**

**CIR 801: RESEARCH METHODS IN COMPUTING AND  
INFORMATICS**

*Date: 25<sup>th</sup> July 2014*

*Time: 2.30 – 4.30 pm*

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**INSTRUCTIONS:**

- Answer any THREE questions of your choice.

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ISO 9001:2008 CERTIFIED



- Q1. (a) Three undergraduate students were engaged in an argument over classification of research. The first student argued that research is classified as pure or applied. The second one claimed that research is classified as quantitative or qualitative. While the third one maintained that research is classified as conceptual or empirical. The three students could not reach a consensus. As a postgraduate student studying research methods, clarify the misunderstanding between these three students with the aim of helping them reach a consensus on the classification of research. [10 marks]
- (b) Questionnaires and interviews are some of the ways adopted in collection of data in research. Outline the major similarities and differences that exist between the two. [10 marks]
- Q2. (a) With the help of a well-labelled diagram show and give a summary of major steps involved in a research process. [10 marks]
- (b) Outline major factors that are considered when making preparation of the research design that is appropriate for a particular research question. [10 marks]
- Q3. (a) **Scientists do believe that science is built on trust and at all times ethics must be observed in research. To uphold ethics, published research should be new, objective and fair. It should not present opinion as facts, distort truths and plagiarize others. When writing a research report, the following key points need to be taken into consideration: Sources, Citations, Quotations, Paraphrases, Summaries and Plagiarism avoidance.** As a research student in the field of computing and informatics, discuss the above statement in details. [8 marks]
- (b) **Some critics of intellectual property, such as those in the free culture movement, point at intellectual monopolies as harming health (in the case of pharmaceutical patents), preventing progress, and benefiting concentrated interests to the detriment of the masses, and argue that the public interest is harmed by ever expansive monopolies in the form of copyright extensions, software patents, and business method patents. More recently scientists and engineers are expressing concern that patent thickets are undermining technological development even in high-tech fields like nanotechnology.** As a research student in the field of computing and informatics and a staunch supporter of intellectual property rights, express argument supported facts contrary to those of the above critics particularly with reference to patents and copy rights. [12 marks]

- Q4. (a) **The Research Proposal is quite similar to an architectural plan, which gives an insight into what the building will look like on completion. It is in this plan that every conceivable detail about the house to be built is underscored.** Discuss the above statement in details with respect to the meaning and importance of a research proposal. [6 marks]
- (b) **Types of research works and studies may be different. However, they have one common characteristic, that is, they are all scientific in nature.** Outline the seven criteria that any scientific research has to satisfy. [14 marks]
- Q5. (a) Discuss why extensive literature survey is very necessary in the process of carrying out research. [10 marks]
- (b) Data can be collected through experiment or survey. Discuss any TWO ways by which data can be collected through survey. Outline factors considered for choosing any method of data collection. [10 marks]