



KARATINA UNIVERSITY

**REGULAR UNIVERSITY EXAMINATIONS
2015/2016 ACADEMIC YEAR**

**SCHOOL OF NATURAL RESOURCES AND
ENVIRONMENTAL STUDIES**

**FOURTH YEAR, SECOND SEMESTER EXAMINATION
BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE**

COURSE CODE: SES 310

COURSE TITLE: RESEARCH METHODS

DATE:

TIME:

INSTRUCTIONS TO CANDIDATES:

- SEE INSIDE

PLEASE TURN OVER

INSTRUCTIONS TO CANDIDATES

Answer ALL questions in section A and ANY TWO in section B.

Illustrate your answers with diagrams wherever necessary

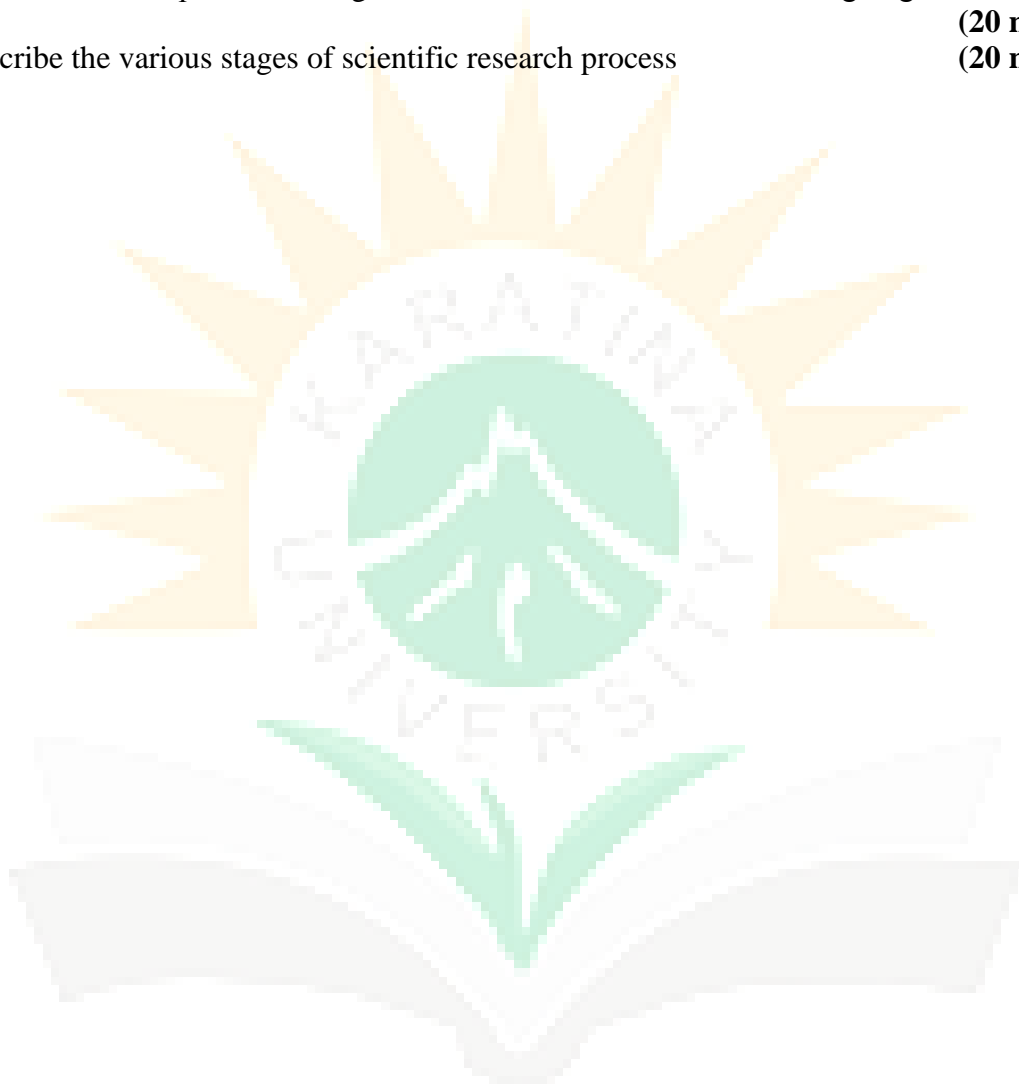
DO NOT WRITE on question paper.

SECTION A (30 Marks)

1. a. The following statements represent two contradicting views regarding how knowledge in science can be derived;
 - Human reason is the chief instrument and ultimate authority in the human search for truth, hence physical evidence are unnecessary to ascertain truth
 - Knowledge comes only (or primarily) from sensory experience hence there are no innate ideas
 - i. What stages in evolution of science does each of the above views represent **(1 marks)**
 - ii. Briefly explain the weaknesses in each of the two approaches **(1 marks)**
 - iii. To what extent do our faculties of reason and experience support our descriptions and knowledge of the world? **(1 mark)**
- b. Explain the difference between
 - i. Descriptive and exploratory research **(1 mark)**
 - ii. True experiments and quasi-experiments **(1 mark)**
2. Briefly explain the importance of having each of the following sections in a research proposal
 - a. Literature review **(1 mark)**
 - b. Statement of the problem **(1 mark)**
 - c. Hypotheses/ research questions **(1 mark)**
 - d. Expected output **(1 mark)**
 - e. Limitations of the study **(1 mark)**
3. Describe the following characteristics of research process
 - a. Apolitical **(1 mark)**
 - b. Replicable **(1 mark)**
 - c. Objectivity **(1 mark)**
 - d. Explicit **(1 mark)**
 - e. Cumulative **(1 mark)**
4. a. Describe four different types of questions you would use in a questionnaire **(2 marks)**
b. Describe three situations in which you would prefer to use questionnaires rather than interviews in collecting data **(3 marks)**
5. a. Explain five considerations on choosing a journal to publish research findings **(2½marks)**
b. Explain why ecological research must be conducted within acceptable ethical standards **(2½ marks)**
6. a. Distinguish between replication and pseudoreplication **(1mark)**
b. Using relevant examples, distinguish between different types of pseudoreplication **(3 marks)**

SECTION B (40 Marks)

7. Describe the different sampling designs applicable in environmental research and the advantages and disadvantages of each design **(20 marks)**
8. Explain the concept of “thinking backwards” and its relevance in designing research projects **(20 marks)**
9. Describe the various stages of scientific research process **(20 marks)**



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