

ROYAL CIVIL SERVICE COMMISSION
BHUTAN CIVIL SERVICE EXAMINATION (BCSE) 2012
EXAMINATION CATEGORY: TECHNICAL

PAPER III: SUBJECT SPECIALIZATION PAPER for ENVIRONMENT SCIENCE

Date	: 14 October 2012
Total Marks	: 100
Examination Time	: 150 minutes (2.5 hours)
Reading Time	: 15 Minutes (prior to examination time)

READ THE FOLLOWING INSTRUCTIONS CAREFULLY:

1. Write your Roll Number clearly on the Answer Booklet in the space provided.
2. The first 15 minutes is being provided to check the number of pages, printing errors, clarify doubts and to read the instructions. You are NOT PERMITTED TO WRITE during this time.
3. Use either Blue or Black ink pen or ball point pen for the written part and Pencils for the sketches and drawings.
4. All answers should be written on the Answer Booklet provided. Candidates are not allowed to write anything on the question paper or any other materials.
5. All answers must be labeled with appropriate question numbers (Section, Question and sub-Question Numbers wherever applicable). Unlabelled answers will not be assessed.
6. This Paper is divided into two sections-namely SECTION A and SECTION B.
7. SECTION A consists of two parts: Part I and Part II.

Part I consists of 30 Multiple-Choice Questions carrying one (1) mark each and is compulsory. The answer of your choice should be clearly written in whole along with the question and option number on your answer booklet. Eg. 31(c).

Part II consists of four (4) short answer questions of five (5) marks each and all questions are compulsory. Mark for each sub-question is indicated in the brackets.

8. SECTION B consists of two Case Studies. Choose only ONE case study and answer the questions under your choice. Each case study carries fifty (50) marks in total. Mark for each sub-question is indicated in the brackets.
9. This Paper consists of EIGHT (8) pages including this Instruction page.

SECTION A (50 MARKS)

Part I: Select the correct answer from the multiple choices given below and write the answer against each question number on the answer sheet. Multiple answer questions (30 X 1 = 30 marks)

- 1. Which of the following greenhouse gases has the greatest heat-trapping ability per molecule?**
 - a. Carbon dioxide
 - b. Carbon monoxide
 - c. Chlorofluorocarbon
 - d. Methane

- 2. The Chemical Oxygen Demand is greater than Biological Oxygen Demand in**
 - a. Clean water
 - b. Water with microbes
 - c. Water with industrial effluent
 - d. Lake water

- 3. The Stockholm conference on environmental protection was held in**
 - a. 1973
 - b. 1992
 - c. 1972
 - d. 1987

- 4. Which of the following is a major pollutant causing acid rain?**
 - a. Carbon dioxide
 - b. Sulphur dioxide
 - c. Hydrogen peroxide
 - d. Carbon monoxide

- 5. The concept that species have changed over long period of time is known as**
 - a. Ecology
 - b. Embryology.
 - c. Spontaneous generation
 - d. Organic evolution

- 6. What does the process of photosynthesis produce?**
 - a. Starch, which is metabolized into less complex molecules by dehydration synthesis
 - b. Protein, which is metabolized into less complex molecules by dehydration synthesis
 - c. Glycerol, which is metabolized into more complex carbohydrates by dehydration synthesis

- d. Glucose, which is metabolized into more complex carbohydrates by dehydration synthesis
7. Which of the following is LEAST likely to be an effect of global warming?
- Loss of fertile delta regions for agriculture
 - Change in global patterns of precipitation
 - Extinction of some species that have narrow temperature requirements
 - Decreased rate of photosynthesis in vegetation
8. Before being washed and reused, all discarded (disposed), infectious and contaminated materials should be made non infectious by soaking these contaminated items for
- 10 minutes in 0.5% chlorine solution
 - 5 minutes in 0.5% chlorine solution
 - 15 minutes in 0.5% chlorine solution
 - 8 minutes in 0.5% chlorine solution
9. The 'Waste Prevention and Management Act of Bhutan 2009' is based on which of the following three guiding principles:
- Precautionary actions, Polluters pay principle and Good Governance
 - Polluters pay principle, Principles of reduce, reuse, recycle and Precautionary actions
 - Precautionary actions, Intergenerational equity principle and Good Governance
 - Principles of reduce, reuse, recycle, Intergenerational equity principle and Good Governance
10. NAMA is a new mechanism under the UN Framework Convention on Climate Change, what does the acronym NAMA stands for?
- National Action Mitigation Adaptation
 - Nationally Appropriate Mitigation Actions
 - Nationally Appropriate Measures Achievements
 - None of the above
11. According to the laws of thermodynamics which of the following can be recycled?
- Both matter and energy
 - Neither matter nor energy
 - Matter
 - Energy
12. Which trophic level is incorrectly defined?
- Carnivores ---- secondary or tertiary consumer
 - Decomposers ---- microbial heterotrophs
 - Herbivores ---- primary consumer
 - Omnivores ---- molds, yeasts and mushrooms

