

ROYAL CIVIL SERVICE COMMISSION
BHUTAN CIVIL SERVICE EXAMINATION (BCSE) 2010
EXAMINATION CATEGORY: TECHNICAL

PAPER III: SUBJECT SPECIALIZATION PAPER FOR ENVIRONMENTAL SCIENCE

Date	:	24th November 2010
Total Marks	:	100
Examination Time	:	2 Hours and 30 Minutes
Reading Time	:	15 Minutes

Number of pages: 6 (Six)

SECTION A (50 MARKS)

Part 1: 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. Biotic environment includes**
 - (a) producers
 - (b) consumers
 - (c) decomposers
 - (d) all the above

- 2. Decomposers include**
 - (a) bacteria
 - (b) fungi
 - (c) both
 - (d) animals

- 3. Abiotic environment does not include**
 - (a) air
 - (b) water
 - (c) soil
 - (d) plants

- 4. Which of the following is not biodegradable?**
 - (a) vegetables
 - (b) fruits
 - (c) earthworms
 - (d) aluminum foil

- 5. Air pollution is caused by**
 - (a) insecticides
 - (b) animals
 - (c) smoke
 - (d) loud speakers

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6. **If waste materials contaminate the source of drinking water which of the following diseases will spread?**
- (a) scurvy
 - (b) typhoid
 - (c) malaria
 - (d) anaemia
7. **Which of the following wastes cannot be decomposed by bacteria to form compost?**
- (a) kitchen wastes
 - (b) plastic and polythene bags
 - (c) dead plants
 - (d) bodies of insects living in the soil
8. **Which of the following problems is not created by noise pollution?**
- (a) diarrhea
 - (b) hypertension
 - (c) deafness
 - (d) irritation
9. **When trees are cut, amount of oxygen**
- (a) decreases
 - (b) increases
 - (c) remains the same
 - (d) none of the above
10. **Which of the following is an example of non-renewable resources?**
- (a) wind
 - (b) water
 - (c) vegetation
 - (d) coal and minerals
11. **Which of the following soil is the best for plant growth?**
- (a) sandy soil
 - (b) clay
 - (c) gravel
 - (d) loamy soil
12. **Sanctuaries are established to**
- (a) rear animals
 - (b) entrap animals
 - (c) protect animals
 - (d) All of the above

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- 13. The death of the last individual of a species is called**
- (a) extinction
 - (b) natural process
 - (c) natural disaster
 - (d) loss of species diversity
- 14. Which one of the following is not a fossil fuel?**
- (a) natural gas
 - (b) petrol
 - (c) coal
 - (d) uranium
- 15. Red Data Book provides a list of**
- (a) list of plants and animals
 - (b) rare, endangered or endemic species
 - (c) disease resistant animals
 - (d) none of the above
- 16. Floods can be prevented by**
- (a) afforestation
 - (b) sustainable forest management
 - (c) tilling the land
 - (d) removing and managing the top soil
- 17. What is the harm from the depletion of Earth's ozone layer?**
- (a) the average temperature of the earth's surface will increase gradually
 - (b) the oxygen content of the atmosphere will decrease
 - (c) increased amount of ultra violet radiation will reach earth's surface
 - (d) sea levels will rise as the polar ice caps will gradually melt
- 18. Acid rain is formed due to contribution from the following pair of gases**
- (a) methane and ozone
 - (b) oxygen and nitrous oxide
 - (c) methane and sulphur dioxide
 - (d) carbon dioxide and sulphur dioxide
- 19. Which of the following is a prime health risks associated with greater UV radiation through the atmosphere due to depletion of stratospheric ozone?**
- (a) damage to digestive system
 - (b) increased live cancer
 - (c) neurological disorder
 - (d) increased skin cancer

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- 20. The most serious environmental effect posed by hazardous wastes is**
- (a) air pollution
 - (b) contamination of ground water
 - (c) increased use of land for landfills
 - (d) destruction of habitat
- 21. Which of the following is not a primary contributor to the greenhouse effect?**
- (a) carbon dioxide
 - (b) carbon monoxide
 - (c) chlorofluorocarbons
 - (d) methane gas
- 22. Which of the following are the example of Municipal and industrial discharge pipes**
- (a) non-point sources of pollution
 - (b) point sources of pollution
 - (c) storm water drainage system
 - (d) none of the above
- 23. The presence of high coliform counts in water indicate**
- (a) contamination by human wastes
 - (b) phosphorous contamination
 - (c) decreased biological oxygen demand
 - (d) hydrocarbon contamination
- 24. How the biological oxygen demand gets affected with the increased presence of organic matter in water?**
- (a) the oxygen demand increases
 - (b) the oxygen demand decreases
 - (c) the oxygen demand remains unchanged
 - (d) none of the above
- 25. The stage in which the biological processes is used to purify water in a wastewater treatment plants is called**
- (a) secondary sewage treatment
 - (b) primary sewage treatment
 - (c) wastewater reduction
 - (d) biochemical reduction
- 26. Which of the following biomes exhibits the greatest diversity in plant species?**
- (a) alpine
 - (b) grassland
 - (c) deciduous forest
 - (d) Tropical rain forest

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- 27. The Environmental Assessment Act was enacted in Bhutan in the year**
- (a) 20 February 1999
 - (b) 14 August 2000
 - (c) 14 July 2000
 - (d) 4 April 2002
- 28. Enforcement and implementation of Occupational Health and Safety measures are the responsibility of**
- (a) National Environment Commission
 - (b) Ministry of Economic Affairs
 - (c) Ministry of Labour and Human Resources
 - (d) All of the above
- 29. Strategic Environmental Assessment is not a separate thing, it is**
- (a) always subject of EIA
 - (b) an element in the environmental legislation
 - (c) always embedded in the planning
 - (d) embedded in the planning or integrated in planning
- 30. Bhutan ratified the United Nations Framework Convention on Climate Change in**
- (a) 1992
 - (b) 1993
 - (c) 1994
 - (d) 1995

Part II: Provide short answers to the following questions (4 X 5 = 20 Marks)

1. What is sanitary landfill? Explain
2. Is public consultation important in the Environmental Impact Assessment? Explain
3. Discuss some of the potential threats of climate change to Bhutan
4. Mention some of the hazardous wastes that Bhutan generate and suggest their management

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SECTION B (50 MARKS)

Choose only 1 (one) question from the following 2 (two) questions (1 X 50 = 50 marks)

1. Bhutan has set aside a huge chunk of land under Protected Areas (PAs) and these areas are under tremendous pressure from socio-economic development. Further, Bhutan has pledged to maintain 60 percent of its land under forest cover at all times to come. Given this scenario, answer the following:
 - a. Discuss advantages and disadvantages of maintaining such PAs from the environmental point of view
 - b. If you were the decision maker, will you allow or prohibit socio economic development within the protected areas? Justify your answer
 - c. Given the pressure from increase in population and development, will Bhutan be able to live up to its commitment of maintaining 60 percent of our land under forest cover at all times to come? Discuss

2. One of the emerging environmental problems in Bhutan is wastes due to increase in population and socio-economic development. Currently, Bhutan is managing the solid wastes by composting, landfill and incineration. Describe some advantages and disadvantages of the following methods:
 - (a) composting
 - (b) landfill
 - (c) incineration
 - (d) Which method would you recommend for Bhutan and why?

End of Examination