



FACULTY	FACULTY OF AGRICULTURE, ENGINEERING AND NATURAL SCIENCES		
DEPARTMENT	ENVIRONMENTAL SCIENCE		
SUBJECT	ENVIRONMENTAL STUDIES		
SUBJECT CODE	GHE 3711		
DATE	June 2022		
DURATION	3 Hours	MARKS	100

WINTER EXAMINATION

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INSTRUCTIONS

1. Present your work as neatly as possible.
2. This paper consists of 3 pages; including cover page.
3. **Answer all the questions.**
4. Use your Examination Answer Book for all the notes you make during your examination.

1. Renewable energy, water pollution & solid and hazardous waste:
Match column A to column B. Write only the answer. Example: 1. Pet waste. Each point is allocated two marks. 10

Column A	Column B
1. In a water treatment plant, chlorination is used to _____.	A. Agriculture
2. _____ can be disposed of in a toilet pot.	B. Kill disease-causing organisms.
3. Around 72% of the water pollution in rivers is attributed to _____.	C. Pet waste
4. Pollution that is discharged into the environment through pipes, sewers, or ditches is called _____.	D. Point source pollution
5. One of the problems associated with sanitary landfills is _____.	E. The possibility of a methane gas explosion

2. Pest management:
A number of alternative methods to controlling pest populations involve some aspect of insect reproductive biology. Why has this feature of insect biology been targeted? Include in your answer:
- i. Two such methods and explain how they work to control the pests. 4
 - ii. The risks associated with each approach. 2
 - iii. Are these approaches broad-spectrum or narrow-spectrum? 2
3. Water resources:
Many developing countries have insufficient water to meet the most basic drinking and household needs. Discuss four potential solutions to the problem and some of the drawbacks associated with those solutions. 8
4. Fossil fuel:
a. Describe the environmental advantage and disadvantage of natural gas as an energy source; address the perspectives of both production and use. 8
5. Human health, air pollution and climate change:
a. A friend tells you there is no reason to worry about the ozone layer. In fact, he says, today's air quality report says there is plenty of ozone around the city. How would you respond? 8
6. Ecosystem, living organisms, and land resources:
The most serious problem facing the world's forests is deforestation.
- a. Describe five problems resulting from deforestation. 10
 - b. Discuss four causes of deforestation in tropical rain forests biome. 8

7. Biological resources and food resources:
- a. Explain the importance of genetic diversity for crop plants and livestock. 2
 - b. Identify one-way genetic diversity is lost in organisms. 2
 - c. Describe one benefit and one difficulty of lower genetic diversity. 4
 - d. Explain three advantages of genetic engineering. 6
 - e. Explain three backlashes against genetically modified food. 6
8. Human population, urban environment and toward sustainability:
- a. What is suburban sprawl? 2
 - b. Is this sprawl “smart growth”? 2
 - c. Why or why not? 4
 - d. Discuss six serious challenges that cities in developing nations are facing. 12