



**B.E DEGREE EXAMINATIONS: MAY 2018**

(Regulation 2015)

Fourth Semester

**U15EST003 : ENVIRONMENTAL SCIENCE AND ENGINEERING**

(Common to AUTO/AERO/MECH)

**COURSE OUTCOMES**

- CO1:** Analyze the impact of engineering solutions in a global and societal context  
**CO2:** Discuss contemporary issues that results in environmental degradation and would attempt to provide solutions to overcome those problems  
**CO3:** Highlight the importance of ecosystem and biodiversity  
**CO4:** Ability to consider issues of environment and sustainable development in his personal and professional undertakings  
**CO5:** Paraphrase the importance of conservation of resources.  
**CO6:** Play a important role in transferring a healthy environment for future generations

**Time: Three Hours**

**Maximum Marks: 100**

**Answer all the Questions:-  
PART A (10 x 1 = 10 Marks)**

1. Matching type item with multiple choice code

CO5 [K<sub>1</sub>]

List I		List II	
A. Solar energy		i. Aluminium	
B. Bauxite		ii. Slash and burn	
C. Shifting cultivation		iii. Inexhaustible	
D. Water logging		iv. Irrigation	

- |    | A   | B  | C   | D  |
|----|-----|----|-----|----|
| a) | ii  | i  | iii | iv |
| b) | iii | iv | ii  | i  |
| c) | ii  | iv | iii | i  |
| d) | iii | i  | ii  | iv |

2. Extensive planting of trees to increase green cover is called

CO2 [K<sub>2</sub>]

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|--------------------|--------------------|
| a) Afforestation   | b) Deforestation   |
| c) Agroforestation | d) Social forestry |

3. Consider the following trophic levels of grassland ecosystem. CO3 [K<sub>1</sub>]
1. Grass                      2. Grasshopper                      3. Frog                      4. Snake                      5. Hawk
- The food chain sequence of grassland ecosystem is
- a) 1-2-3-4-5                      b) 2-1-3-4-5  
 c) 1-2-3-5-4                      d) 1-2-4-3-5
4. Vinblastin and vincristine, two anticancer drugs have been isolated from CO3 [K<sub>2</sub>]
- a) Periwinkle                      b) Cinchona  
 c) Bacterium                      d) Jelly fish
5. Itai – itai disease in Japan was caused due to CO2 [K<sub>1</sub>]
- a) Mercury                      b) Iron  
 c) Cadmium                      d) Zinc
6. Vermicompositing is a method of composting that involves CO2 [K<sub>2</sub>]
- a) Tapeworms                      b) Silkworms  
 c) Earthworms                      d) Leeches
7. Ozone hole is observed in CO4 [K<sub>2</sub>]
- a) Antarctica                      b) Africa  
 c) North America                      d) Norway
8. Cattle, sheep and termites are responsible of the following greenhouse gas CO4 [K<sub>2</sub>]
- a) Methane                      b) Nitrous oxide  
 c) Carbon dioxide                      d) Sulphur dioxide
9. NMIS generates database on CO6 [K<sub>1</sub>]
- a) Research and Development projects                      b) Coastal ecology  
 c) Biodiversity                      d) Occupational health
10. Telemedicine and weather forecasting are examples of CO6 [K<sub>1</sub>]
- a) Computer based modeling for analysis of weather                      b) Use of radio sensing technology of weather  
 c) Diversification of the healthcare department                      d) Application of IT in environment and healthcare

**PART B (10 x 2 = 20 Marks)**  
**(Answer not more than 40 words)**

11. State two problems caused by water logging. CO1 [K<sub>2</sub>]
12. Write two consequences of timber extraction. CO5 [K<sub>2</sub>]

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|---|-----|-------------------|
| 13. Define ecological succession and mention its types.                                 | CO3 | [K <sub>1</sub> ] |
| 14. List two biodiversity hot spots in India.   | CO3 | [K <sub>1</sub> ] |
| 15. Distinguish between point and non-point sources of water pollution with an example. | CO2 | [K <sub>2</sub> ] |
| 16. Identify two impacts of earthquake on environment.                                  | CO2 | [K <sub>2</sub> ] |
| 17. Mention two effects of acid rain.   | CO4 | [K <sub>2</sub> ] |
| 18. State two causes of ozone layer depletion.  | CO4 | [K <sub>1</sub> ] |
| 19. Mention two family welfare programme implemented in India.                          | CO6 | [K <sub>1</sub> ] |
| 20. Predict two benefits of using GIS system.   | CO6 | [K <sub>1</sub> ] |

**Answer any FIVE Questions:-  
PART C (5 x 14 = 70 Marks)  
(Answer not more than 300 words)**

**Q.No. 21 is Compulsory**

- |  |     |                   |
|--|-----|-------------------|
| 21. Summarize the characteristic features, structure and functions of forest ecosystem.  | CO5 | [K <sub>2</sub> ] |
| 22. Explain <i>in-situ</i> and <i>ex-situ</i> conservation measures followed in our country for the protection of wildlife and plants. | CO3 | [K <sub>1</sub> ] |
| 23. Classify solid waste based on its nature. Outline the three methods of disposal of degradable urban solid waste.                   | CO2 | [K <sub>1</sub> ] |
| 24. Outline the impacts of using fertilizer and pesticide for crop production by farmers of India.                                     | CO1 | [K <sub>2</sub> ] |
| 25. Write the salient features of water act and wildlife act.  | CO4 | [K <sub>2</sub> ] |
| 26. Narrate the role of Information Technology (IT) in environment and human health.   | CO6 | [K <sub>2</sub> ] |
| 27. Discuss four methods of harnessing solar energy with diagram.  | CO1 | [K <sub>3</sub> ] |

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