



**B.E DEGREE EXAMINATIONS: MAY 2017**

(Regulation 2015)

Fourth Semester

**CIVIL ENGINEERING**

U15EST002: Introduction to Environmental Science and Engineering

**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 an important role in transferring a healthy environment

**Time: Three Hours**

**Maximum Marks: 100**

**Answer all the Questions:-**

**PART A (10 x 1 = 10 Marks)**

1. Match List I with List II and select the correct answer using the given codes below

CO5 [K<sub>2</sub>]

List I		List II	
A. Carbon credit		i. Aquifers	
B. Mining		ii. Forests	
C. Solar energy		iii. Occupational health hazards	
D. Ground Water		iv. Renewable source	

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

2. Water and air are the major factors affected by CO5 [K<sub>2</sub>]
- a) Landslides b) Soil erosion
- c) Pollution d) Desertification

3. Choose the correct statements from the following CO3 [K<sub>2</sub>]
1. Energy flow in an ecosystem is unidirectional
  2. Phytoplankton are the producers in a forest ecosystem
  3. Interlocking pattern of food chain is called ecological succession
  4. Lichens are the pioneer species in xerosere succession

- a) 1,3 b) 1,4
- c) 1,2 d) 2,3

4. Match List I with List II and select the correct answer using the given codes below CO3 [K<sub>3</sub>]

List I	List II
A. Food items	i. Aesthetic value
B. Tulsi & Cow	ii. Consumptive value
C. All life to be conserved	iii. Social value
D. Touristic places	iv. Ethical value

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

5. Assertion (A): Air pollution causes cancer CO2 [K<sub>3</sub>]

Reason (R): Inhalation of particulate matter affects the lungs

- a) Both A and R are Individually true and R is the correct explanation of A b) Both A and R are Individually true but R is not the correct explanation of A
- c) A is true but R is false d) A is false but R is true

6. Uses of cooling ponds prevents CO3 [K<sub>3</sub>]

- a) Air pollution b) Noise pollution
- c) Thermal pollution d) Nuclear pollution

7. Choose the correct chronological order of the following CO4 [K<sub>3</sub>]

1. Montreal protocol 2. Chernobyl nuclear disaster 3. Wildlife protection act 4. Air act

- a) 2-3-4-1 b) 1-3-2-4
- c) 3-4-2-1 d) 4-1-3-2

8. El nino is related to CO4 [K<sub>2</sub>]  
 a) Air pollution b) Climate change  
 c) Sustainable development d) Energy consumption
9. Assertion (A): Increase in Population increases pollution CO6 [K<sub>2</sub>]  
 Reason (R): Use of natural resources is increased  
 a) Both A and R are Individually true and R is the correct explanation of A b) Both A and R are Individually true but R is not the correct explanation of A  
 c) A is true but R is false d) A is false but R is true
10. HIV is transmitted through CO6 [K<sub>2</sub>]  
 a) Blood b) Air  
 c) Saliva d) Mosquito

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

11. List the ecological effects of forest resources CO6 [K<sub>2</sub>]
12. Specify the impacts of dam construction CO2 [K<sub>2</sub>]
13. Differentiate between extinct and endangered species CO5 [K<sub>3</sub>]
14. What is an hotspot and name any two in India CO5 [K<sub>2</sub>]
15. State the ways to protect the construction industry people from pollution CO1 [K<sub>2</sub>]
16. Outline the techniques to remove oil spill from sea CO3 [K<sub>2</sub>]
17. Define sustainable development CO6 [K<sub>2</sub>]
18. List the effects of global warming CO3 [K<sub>3</sub>]
19. Differentiate between communicable and non-communicable diseases CO1 [K<sub>2</sub>]
20. A country's annual population growth rate is 1.2%. Calculate the number of years required to double the population CO4 [K<sub>2</sub>]

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

**Q.No. 21 is Compulsory**

21. (i) List the wastes generated in construction industry and discuss the different ways in which the wastes obtained from construction materials can be managed without affecting the environment (7) CO2 [K<sub>3</sub>]
- (ii) State the causes for greater loss to the society due to flood damage and explain the how of a civil engineer could play a role in order to reduce the loss. (7) CO3 [K<sub>3</sub>]

- |     |      |   |     |     |                   |
|-----|------|---|-----|-----|-------------------|
| 22. | (i)  | Analyse the environmental and health impacts of coal mining and discuss the measures to mitigate the effects  | (7) | CO3 | [K <sub>3</sub> ] |
|     | (ii) | Discuss the causes and consequences of destroying forest areas.   | (7) | CO6 | [K <sub>3</sub> ] |
| 23. | (i)  | Explain of structure and function of an ecosystem.  | (7) | CO5 | [K <sub>3</sub> ] |
|     | (ii) | Outline the major threats to biodiversity and explain various methods adopted in India to conserve the biodiversity with examples                               | (7) | CO5 | [K <sub>3</sub> ] |
| 24. |      | “Alternate energy sources are need of the hour” – comment on the statement and discuss any three alternate energy sources with its advantages and disadvantages |     | CO4 | [K <sub>2</sub> ] |
| 25. |      | Elaborate on the causes, effects and control measures of air pollution  |     | CO2 | [K <sub>2</sub> ] |
| 26. | (i)  | State the water act and issues involved in enforcing legislation  | (7) | CO6 | [K <sub>3</sub> ] |
|     | (ii) | State the issues involved in Rehabilitaion and Resettlement of people   | (7) | CO1 | [K <sub>3</sub> ] |
| 27  | (i)  | With examples analyse the role of information technology in environment and human healthcare.   | (7) | CO2 | [K <sub>3</sub> ] |
|     | (ii) | Discuss how the different welfare programme implemented by the country helps in increasing the standards of the people  | (7) | CO1 | [K <sub>3</sub> ] |

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