



B.TECH DEGREE EXAMINATIONS: APRIL 2018

(Regulation 2015)

Eighth Semester

BIOTECHNOLOGY

U14BTE405: Ecological and Environmental Engineering

COURSE OUTCOMES

- CO1: Outline the concepts of ecosystem and environmental interactions
 CO2: Understand the ecosystem functions
 CO3: Designing and construction of eco-agri engineering systems
 CO4: Apply the concepts of ecological engineering in ecosystem rehabilitations
 CO5: Development of sustainable ecosystems

Time: Three Hours

Maximum Marks: 100

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

1. Match the following with multiple choice code

CO1 [K₂]

List I	List II
A. Ecology	i. Ecology of species
B. Autoecology	ii. reciprocal relationship between living and nonliving components
C. Synecology	iii. ecology of community
D. Ecotype	iv. genetically fixed environmental variations

- | | 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. Species that occur in different geographical regions separated by special barrier are

CO1 [K₂]

- | | |
|--------------|----------------------|
| a) siblings | b) Allopatric |
| c) Sympatric | d) None of the above |

10. The chemical most commonly used to increase speed of sedimentation of sewage is CO5 [K₁]
- a) Sulphuric acid b) lime
- c) Copper sulphate d) Sodium permanganate

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

11. Differentiate ecology and environment. CO1 [K₂]
12. Define mutation. CO1 [K₁]
13. Interpret the ill effects of biomagnification. CO2 [K₃]
14. Write about the nutrient cycling. CO2 [K₄]
15. Mention any one application of ecological self design for promoting sustainable development. CO3 [K₁]
16. Differentiate the rhizosphere Engineering from the usage of entomopathogenic nematodes for agro-ecological engineering. CO3 [K₂]
17. Why is step cropping effective in ecological engineering? CO4 [K₂]
18. What are bio-wind screens? CO4 [K₁]
19. List any two examples of traditional exploitation of ecosystem. CO5 [K₃]
20. Analyze the advantages of integrated ecological engineering system. CO5 [K₄]

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

Q.No. 21 is Compulsory

21. Explain the principle and concept pertaining to species, population and community. CO1 [K₂]
22. Discuss the terrestrial, freshwater, estuarine and marine habitat ecology CO2 [K₃]
23. Compare the sustainable artificial systems from different cultures. CO3 [K₅]
24. Describe the rehabilitation of ecosystems through ecological principles. CO4 [K₁]
25. Elaborate on the bio-monitoring of aquatic ecosystem. CO4 [K₃]
26. Demonstrate on the case study of integrated ecological Engineering systems with relevant merits and demerits. CO5 [K₄]
27. Appraise the distribution of ecosystems and its restoration possibilities with examples. CO5 [K₅]
