

## BACHELOR OF CIVIL ENGINEERING 3RD YEAR EXAMINATION, 2018

(1<sup>st</sup>-Semester Supplementary)

SUBJECT: Ecology &amp; Environmental Management

Time: Three hours

Full Marks 100

Use a separate Answer-Script for each part

No. of Questions	Part I (60 marks)	Marks																					
	<b>Question numbered 1 is compulsory and any four from the rest. Answer should be brief and to the point. Use pencil for any sketch. Assume any relevant data if not provided</b>																						
Q1.	<b>Differentiate between</b> i) Ecology and ecosystem ii) Lotic environment and lentic environment iii) Gross primary productivity and net primary productivity iv) Food chain and food web v) Age distribution of India (expanding population) and China (diminishing population)	4×5=20																					
Q2.	Describe the classification of ecology based on levels of organisms with one example of each. With a neat labeled compartment diagram describe basic components of an ecological model.	5+5																					
Q3.	Considering pond as an ideal ecosystem describe the major components with examples. With an example define ecotone.	8+2																					
Q4.a)	Write the importance of Simpson Index and Shannon Index in association with determination of diversity with their equations and values.	2.5×2																					
	b) Write a short note on ecological pyramid.	5																					
Q5.	With neat labeled sketch explain S shaped growth form of population. What is carrying capacity? What do you mean by density dependent regulation of population? The periodic departure and return of population is termed as-----.	5+2+2 +1																					
Q6.	What do you mean by reservoir pool and cycling pool in association with biogeochemical cycle? Write the name of two important nutrients governing the eutrophication in lake. How sea birds take an important role in phosphorus cycle explain. Give the example of a biogeochemical cycle which governs another biogeochemical cycle.	2+2+2 +3+1																					
Q7.	Name two factors affecting ecosystem. Why estuarine is more productive than the adjacent ecosystems? Write the names of two classifications of ecosystem based on source of energy with one example for each. Determine the age specific death rate and average proportion of year lived for the given population.	2+2+2 ×2																					
	<table border="1"> <thead> <tr> <th>Age Group</th> <th>3-year population</th> <th>Deaths in 3 years</th> </tr> </thead> <tbody> <tr> <td>&lt;1</td> <td>25000</td> <td>150</td> </tr> <tr> <td>1-20</td> <td>105000</td> <td>50</td> </tr> <tr> <td>21-40</td> <td>190500</td> <td>200</td> </tr> <tr> <td>41-60</td> <td>87500</td> <td>500</td> </tr> <tr> <td>61-80</td> <td>45000</td> <td>2500</td> </tr> <tr> <td>80+</td> <td>19000</td> <td>3500</td> </tr> </tbody> </table>	Age Group	3-year population	Deaths in 3 years	<1	25000	150	1-20	105000	50	21-40	190500	200	41-60	87500	500	61-80	45000	2500	80+	19000	3500	
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**Bachelor of Civil Engineering Supplementary Examination 2018**(3<sup>rd</sup> Year 1st semester)**Ecology and Environmental Management**

Time: Three Hours

Full Marks: 100

Use separate answer script for each part (60 marks for Part I and 40 marks for Part II)

**Part-II**

Answer Question No. 1 and any Two from the rest. Answers should be brief.

1. Answer the followings very briefly:

- a) Correlate 'Sustainable Development' and 'Environmental Impact Assessment (EIA)' study?
- b) What is the significance of River Valley Projects in the history of EIA study in India?
- c) Why is modeling essential in an EIA study?
- d) Write about legal introduction of EIA in India.
- e) Name the authorities who can give prior Environmental Clearance (EC).
- f) Give examples of screening based on nature and scale of activity respectively.
- g) What is 'base line standard'?
- h) How are the B<sub>2</sub> projects appraised?
- i) What are given in (i) Appendix II and (ii) Appendix IIIA?
- j) Give example of projects having (i) all four stages (ii) two stages only.

2x10=20

**Bachelor of Civil Engineering Supplementary Examination 2018**(3<sup>rd</sup> Year 1st semester)**Ecology and Environmental Management**

Use separate answer script for each part (60 marks for Part I and 40 marks for Part II)

**Part-II**

Time: Three Hours

Full Marks: 100

2. a) Mention threshold limit related with EIA for (i) Thermal Power Plants and (ii) Mining of Minerals  
b) Mention all four 'General Conditions'. Which one among those can be reduced or completely done away and under what condition? 4+6=10
3. a) What is 'Specific Condition' with respect to EIA study?  
b) Draw a flow chart showing EC procedure.  
c) What is the basic limitation of Indian EIA method? 3+5+2=10
4. Write the differences between followings (any five):  
(a) Waste minimization before generation and waste minimization after generation  
(a) EIA study and LCA study  
(b) Rapid EIA & Comprehensive EIA  
(c) Pre-monitoring & Post-monitoring  
(d) SEIAA & MoEFCC  
(e) application for prior EC for an industrial project and a residential project  
(f) 'A' type project and 'B' type project 2X5=10

