

BACHELOR OF CIVIL ENGINEERING 3RD YEAR EXAMINATION, 2018

(1st-Semester)

SUBJECT: Ecology & Environmental Management

Time: Three hours

Full Marks 100

Use a separate Answer-Script for each part

No. of Questions	Part I (60 marks)	Marks																					
	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																						
Q1.	Differentiate between i) Primary productivity and secondary productivity ii) Autecology and synecology iii) Shannon Index and Simpson Index iv) Ecological niche and ecological pyramid v) J-shaped and S-shaped population growth curve	4×5=20																					
Q2.	What do you mean by 'ecological model'? With a neat labeled compartment diagram show basic components of an ecological model. Explain bio magnification with an example.	2+5+3																					
Q3.a)	Explain food chain with the example of grazing food chain with a neat schematic diagram.	5																					
b)	'Y-shaped model of energy flow is more realistic and practical working model than single channel models' - explain with a neat labeled sketch.	5																					
Q4.a)	Describe the major components of an ideal ecosystem.	8																					
b)	Explain the importance of heterotrophs in wastewater treatment.	2																					
Q5.	What is biogeochemical cycle? Write the name of microorganisms (one each) responsible for nitrification, de-nitrification and nitrogen fixation with reference to nitrogen cycle. Write the reservoir pool and cycling pool of phosphorus cycle. With the example explain how one biogeochemical cycle governs another biogeochemical cycle.	2+3+2+3																					
Q6.a)	Explain the importance of a life table. Determine the age specific death rate, average proportion of year lived and probability of surviving for the given population.	2+2×4																					
	<table border="1"> <thead> <tr> <th>Age Group</th> <th>5-year population</th> <th>Deaths in 5 years</th> </tr> </thead> <tbody> <tr> <td><1</td> <td>27329</td> <td>140</td> </tr> <tr> <td>1-20</td> <td>106607</td> <td>40</td> </tr> <tr> <td>21-40</td> <td>180626</td> <td>190</td> </tr> <tr> <td>41-60</td> <td>87437</td> <td>700</td> </tr> <tr> <td>61-80</td> <td>42035</td> <td>2690</td> </tr> <tr> <td>80+</td> <td>18952</td> <td>3375</td> </tr> </tbody> </table>	Age Group	5-year population	Deaths in 5 years	<1	27329	140	1-20	106607	40	21-40	180626	190	41-60	87437	700	61-80	42035	2690	80+	18952	3375	
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Bachelor of Civil Engineering Examination 2018

(3rd 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. Please answer Question No. 1 first

1. Answer the followings very briefly:

- a) What type of waste minimization is Environmental Impact Assessment (EIA) process?
- b) Mention the type of project for which EIA was started first in India.
- c) Why is modeling essential in an EIA study?
- d) Mention the gap (in years) between administrative introduction and legal introduction of EIA in India.
- e) Who has the authority to give prior Environmental Clearance (EC)?
- f) Give an example of screening based on nature of activity.
- g) What must be done by the proponent before application for EC?
- h) Why is 'base line standard' so called? i) What should be the *validity* of ToR?
- j) What is the similarity between LCA and EIA? k) Who can be the Member Secretary of SEIAA?
- l) Name the screening committee for B category projects. m) What is the purpose of form 1M?
- n) As 'MoEF & CC' to Center and 'SEIAA' to State, what may be to district?
- o) Write the full forms of (i) NEPA (ii) MoEF & CC. p) How are the B2 projects appraised?
- q) When is a conceptual plan required to be submitted along with application by the proponent?
- r) Give example of a category B1 project, where the EIA process may have only three stages.
- s) What is the time limit for conveying ToR to the proponent?
- t) Where is the procedure for conduct of public hearing given in EIA notification? 1x20=20

Bachelor of Civil Engineering Examination 2018

(3rd Year 1st semester)

Ecology and Environmental Management

Marks: 100 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

Question No. 1 first

- a) Mention threshold limit related with EIA for Mining of minerals. 'The process of granting EC For sustainable sand mining and mining of minor minerals has been decentralized'-explain.
- b) Mention all four 'General Conditions'. Which one can be reduced or completely done away and under what condition?

5+5=10

of EIA in India

- a) What is common about Items 4(d), 4(f), 5(e), 5(f) of the Schedule?
- b) Draw a flow chart showing EC procedure for an industrial project.
- c) What is the basic limitation of Indian EIA method?

3+5+2=10

Secretary of SEIA

Write the differences between followings (any five):

of form 1M

- (a) Reuse & Recycling
- (b) EIA & Environmental Audit
- (c) Rapid EIA & Comprehensive EIA
- (d) Pre-monitoring & Post-monitoring
- (e) SEIAA & DEIAA
- (f) Form 1 & Form 1A
- (g) Screening & Scoping

praised?

ment?

es.

2X5=10

1x20=20