

Ref No.: Ex/PG/CIV/PE/T/113A/2025

M.E. CIVIL ENGINEERING 1st YEAR 1st SEMESTER EXAMINATION, 2025

(1st /-2nd Semester / Repeat/ Supplementary / Annual /-Biannual)

SUBJECT: ENVIRONMENTAL IMPACT ASSESSMENT

Full Marks: 100

Time: ~~Two hours/Three hours/Four hours/ Six hours-~~

(60 marks for this part)

Use a separate Answer-Script for each part

No. of Question	Part-I	Marks
	<u>Answer Question-1 and any two from the rest</u>	
Q.1) a)	State the objectives behind the 'Environmental Impact Assessment'.	4
b)	Differentiate between conservative and non-conservative constituents of a riverine system	3
c)	Delineate the basic steps associated with the prediction of changes and assessment of impact of consequent changes in water environment .	10
d)	What are the various parameters used for describing the impact of a project in a qualitative manner.	4
e)	Deduce the necessary expression for " O'Connor Model " of determining the concentration of a conservative constituent in a riverine system.	9
Q.2) a)	State the basic assumptions behind the formulation of " PFR Model ".	2
b)	Deduce the pertinent expression for estimating the pollutant concentration assuming a river reach as a CFSTR .	6
c)	A river reach is considered as three continuous flow stirred tank reactor connected in series. A tracer decaying as per first order reaction is introduced at the extreme upstream end of the river at a concentration of 127 mg/L . Determine the steady state concentration of the tracer at points 330m, 660m and 990m downstream. Consider the segmental volumes as: $V_1 = 2.66 \times 10^4 \text{ m}^3$ $V_2 = 3.88 \times 10^4 \text{ m}^3$ $V_3 = 5.31 \times 10^4 \text{ m}^3$ Given flow rate of the river = 12.5 m³/sec and decay rate constant (K) for the tracer = 0.268/day .	7

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No. of Question	Part-I	Marks
Q.3) a)	What are the essential features of “ Leopold Matrix method of Environmental Impact Analysis ”?	4
b)	Discuss in brief on the steps followed in the “ Semi-quantitative Index Method of Environmental Impact Analysis ” to estimate the potential environmental impact.	7
c)	What are the potential impacts of the following activities during the construction phase of any project? i) Site clearing ii) Civil Works iii) Operation of Heavy Equipment	4
Q.4) a)	What are objectives behind the recommendation of mitigation measures ?	4
b)	Describe the three-step process applied for impact mitigation for any type of developmental project	7
c)	State the mitigation measures recommended by MoEF for air and noise environment .	4

M. E. Civil Engineering First Year First Semester Examination 2025

Environmental Impact Assessment

Time: Three Hours

Full Marks: 100

Use separate Answer-Scripts for each part

Part-II (40 marks)

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

1. Answer the followings briefly:
 - a) 'Environmental Impact Assessment (EIA) is an efficient method of waste reduction.'- explain.
 - b) Write a brief note about application procedure of EIA
 - c) How was EIA started in India?
 - d) Write all the threshold values of the project 'Thermal Power Plant' in a tabular form. 4X4=16

2.
 - a) Write in details about selection of site of a proposed project.
 - b) How are the proposed project screened? Give examples in details. Name the screening committees.
 - c) What is the significance of Scoping stage? 3+6+3=12

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M. E. Civil Engineering First Year First Semester Examination 2025

Environmental Impact Assessment

Time: Three Hours

Full Marks: 100

Part-II (40 marks)

3. a) How are 'background monitoring, and 'base line standard' related?
b) Write the significance of 'Terms of Reference' (TOR).
c) When was 'public hearing' first incorporated in EIA study? What were its loopholes? How some of which are removed in current notification? What else can be done to involve more affected public? 2+3+7=12
4. a) Which documents are appraised for EC? Mention about the time limits for appraisal and grant of EC.
b) Mention about transferability of an EC. Write a brief note about 'post monitoring'.
c) Give example of two projects for which you must apply to MoEFCC for EC.
d) Give example of two projects (other than 'B2') for which Public Consultation need not to be undertaken.

4+4+2+2= 12