

Master of Civil Engineering 1<sup>st</sup> Semester Examination 2017

## Environmental Impact Assessment

Time: Three Hours

Full Marks: 100

(50 marks for each part)

*Use separate Answer-Scripts for each part*

## Part-1

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

1. Answer the followings briefly:

- a) Define Sustainable Development as per *Brundtland Report*.
- b) Correlate Sustainable Development and Waste Minimization (WM).
- c) 'Environmental Impact Assessment (EIA) is one of the best forms of WM'-explain.
- d) Correlate *EIA, River Valley Projects* and *DoST*.
- e) Write *legal* history of EIA very briefly (but, with specific dates).
- f) Give specific *examples* of screening of projects with respect to *scale*.
- g) "Acquisition of land is a pre-requisite for application for EC"-say 'True' or 'False' with *reasons*.
- h) What are given in following *appendixes* (i) II (ii) III A (iii) V (iv) VI
- i) Name the *regulatory* authorities with respect to EIA.
- j) Discuss about the *limitations* of EIA system in India

2x10=20

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2. a) Mention threshold limits related with EIA for  
(i) Mining of minerals  
(ii) Thermal Power Plants  
(iii) Chlor-alkali Industry
- b) Mention the 'General Condition'. Comment about its leniency in details.
- c) Write about the application procedure for Environmental Clearance (EC). 6+6+3=15
3. a) What is the basic difference between public hearing and public consultation?
- b) What may be appraised for a B2 project prior EC?
- c) Describe situations when proponent may presume that EC has been granted.
- d) Describe the process of rejection of prior EC. 3+3+4+5=15
4. a) 'Maximum time period may be required to get EC by the proponent is 195 days from date of submission of final EIA report'-explain.
- b) Describe Specific Condition of the Schedule with relevant item numbers.
- c) Describe the importance of following in an EIA study:  
(i) background concentration (ii) air, water and noise quality standards (iii) post monitoring 4+5+6=15

M.C.E. 1<sup>st</sup> SEMESTER EXAMINATION, 2017(1<sup>st</sup> / 2<sup>nd</sup> Semester / Repeat / Supplementary / Annual / Biannual)

## SUBJECT: ENVIRONMENTAL IMPACT ASSESSMENT

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

Full Marks: 100

(50 marks for each part)

Use a separate Answer-Script for each part

No. of Question	Part-II	Marks
	<u>Answer Question-1 and any two from the rest</u>	
Q.1) a)	State the <b>objectives</b> behind the 'Environmental Impact Assessment'.	4
b)	State the <b>purposes</b> behind the Environmental Impact Analysis.	3
c)	Delineate the basic steps associated with the prediction of changes and assessment of impact of consequent changes in <b>water environment</b> .	9
d)	What are the different approaches followed during <b>identification of anticipated noise levels</b> for an EIA study?	4
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 129 mg/L. Determine the steady state concentration of the tracer at points 320m, 640m and 960m downstream. Consider the segmental volumes as: $V_1 = 2.37 \times 10^4 \text{ m}^3$ $V_2 = 3.78 \times 10^4 \text{ m}^3$ $V_3 = 5.19 \times 10^4 \text{ m}^3$ Given flow rate of the river = 13.6 m <sup>3</sup> /sec and decay rate constant (K) for the tracer = 0.276/day. (Assume any other relevant data, if required)	7

Time: ~~Two hours~~ / Three hours / ~~Four hours~~ / ~~Six hours~~Full Marks: 100  
(50 marks for each part)

No. of Question	Part-II	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.	8
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	3
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