

End Semester Examinations – April/May 2013

Degree : B.E. Civil Engineering (V Semester) Regulations : 2008 (Arrear)
Course Title : Environmental Impact Assessment Course Code : CE 9046
Duration : Three hours Max. Marks : 100

Instructions

- Answer all Questions in Part A
- Answer Question 11 and (a) OR (b) of Questions 12 to 15 in Part B
- Assume suitable data wherever necessary.
- Each Question in Part A carry 2 marks and that in Part B carry 16 marks

Part A (10 x 2 = 20 marks)

1. What are the objectives of Environmental Impact Assessment (EIA)?
2. List four generic alternatives to a developmental project.
3. What is expected in the "ToR" for an EIA?
4. Distinguish the scope of "Rapid EIA" and "Cumulative EIA".
5. Provide an example of an activity that can adversely impact the air environment and suggest an appropriate mitigation action.
6. What are the limitations of using Check List methods in EIA?
7. What is the purpose of post Environmental Audit?
8. What is meant by impacts on flora and fauna ?
9. What are the options to mitigate noise due to highways?
10. What are the requirements regarding public hearing?

Part B (5 x 16 = 80 marks)

11. (i) Explain the different elements of EIA in relation to the Project Cycle (8)
(ii) Briefly describe the legal provisions in India regarding EIA (8)
12. (a) (i) Distinguish between a water quality "Indicator" and water quality "Index". Compute the water quality index based on the data given in Table 1. What is the use of this index? How would have the values in the last two columns of the Table 1 obtained? (16)

P.T.O.

TABLE 1

Variable	Measurement	Importance (Ii)	Weightage (Wi)
DO	60%	60	0.17
Fecal Coliform	10 ³	20	0.15
pH	7	90	0.12
BOD ₅	10	30	0.10
NO ₃	10	50	0.10
PO ₄	5	10	0.10
Temperature	5	40	0.10
Turbidity	40	44	0.08
Total solids	300	60	0.08

(OR)

12. (b) (i) Explain the steps involved in planning the baseline data collection for EIA (8)
(ii) Explain the sources and impacts of suspended particulate matter (SPM) and describe the procedure to determine of SPM using high volume sampler. (8)

13. (a) (i) Discuss the process of Screening and Scoping as applicable to EIA in Indian context. (8)
(ii) Present the Leopold matrix method in EIA and highlight its strengths and applicability. (8)

(OR)

13. (b) (i) Provide an example each for both positive and adverse environmental impacts of short term and long term duration (8)
(ii) List the criteria to be considered while selecting an EIA Methodologies? (8)

14. (a) (i) List the different Ecological impacts associated with developmental Projects and suggest mitigation measures for each (8)
(ii) A machine shop has two machines, one producing a sound pressure level of 70 dBA and another 55 dBA. It is proposed to install a third machine producing 70 dBA in the same shop. What will be the sound pressure level due to the machine shop at a hospital located at 500m from the machine shop if the three machines are operated together. (8)

(OR)

- 14 (b)(i) A power plant burns 200 tonnes of fuel containing 3% sulphur per day. The flue gases are emitted into the atmosphere through a stack whose height is 100 m. What is the SO₂ emission rate expected from the stack if no pollution control measures are adopted by the plant? Recommend two measures to mitigate the impacts of SO₂ emission? (8)
(ii) Discuss the socio economic impacts of developmental projects and the mitigation measures (8)

15. (a) (i) List the different sections of a typical EIA Report in its order? What are the methods for review of an EIA Report? (8)
(ii) List any six adverse impacts of a "Irrigation Project" and suggest appropriate mitigation measures for each

(OR)

- 15(b) (i) List any six adverse impacts of a "Ports and Harbour Project" and suggest appropriate mitigation measures for each (8)
(ii) Explain the concept of green building and the measures to reduce environmental impacts of construction activities. (8)