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B.E / B.Tech (Part Time) DEGREE END SEMSTER EXAMINATIONS, APRIL/MAY 2014  
CIVIL ENGINEERING  
SIXTH SEMESTER (Arrear) –REGULATIONS 2005 /2009

PTCE 526 / PTCE 9046 ENVIRONMENTAL IMPACT ASSESSMENT

Time 3 hrs

Max marks 100

**Answer all questions**

**PART A (10x2=20)**

1. Define sustainable development.
2. Define Strategic Impact Assessment and Cumulative Impact Assessment.
3. How are the projects categorized for conducting EIA study?
4. What are the limitations of adhoc method for impact identification?
5. List any four projects that could affect soil environment.
6. Define Endangered Species and Threatened Species.
7. What is the hierarchy for selection of mitigation measures for adverse impacts?
8. List any four methods to mitigate social impacts due to development projects.
9. What are the responsibilities of State Environmental Impact Assessment Authority?
10. List any four impacts caused by dam projects.

**PART B (5x16=80)**

11. Discuss the salient features of EIA Notification of Government of India to obtain environmental clearance for developmental projects
- 12(a) Discuss the strength, weakness and applicability of various methodologies of EIA. What are the basic criteria to select an appropriate methodology for a specific project? (10+6)

(OR)

- 12(b) What are the key elements in the EIA process? Explain in detail.
- 13(a) A sewage treatment plant located on the bank of a river discharges secondary effluent with a BOD<sub>5</sub> of 30 mg/L, a dissolved oxygen concentration of 2.0 mg/L, and a flow rate of 25,000 m<sup>3</sup>/day. The river water flowing at a rate of 0.9 m<sup>3</sup>/s has a dissolved oxygen concentration of 6 mg/L and BOD<sub>5</sub> of 3.5 mg/L. The K<sub>1</sub> and K<sub>2</sub> values are 0.2 / day and 0.5/day respectively. The river water velocity is 0.4 m/s. Determine the time, distance at which critical DO occurs. The saturated DO concentration is 7.6 mg/L

(OR)

- 13(b) A proposed oil refinery plant will emit the NO<sub>x</sub> concentration at 1.2 kg/minute through its stack. Height and diameter of stack are 100 m and 2.5 m respectively, gas exit velocity 15 m/s, wind velocity 3.0 m/s, flue temperature is 145°C, ambient temperature is 25°C. Predict the impact due to NO<sub>x</sub> emission at 2 km downwind direction. For the given stability conditions the horizontal and vertical dispersion coefficients are 170 m and 60 m respectively. The background concentration of NO<sub>x</sub> is 50 µg/m<sup>3</sup>.
- 14(a) What is Environmental Management Plan? Discuss in detail about the requirements of an Environmental Management Plan.

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(OR)

14(b) Discuss the importance, procedure, advantages and disadvantages of Public Hearing Process in EIA.

15(a) With the help of a neat schematic, explain phases of municipal wastewater treatment plant project and EIA to be carried out for the project

(OR)

15(b) It is proposed to lay a National Highway to connect three state capitals. What will be the beneficial, detrimental, direct, indirect, short term, long term, single and cumulative impacts? List any four effects under each type of impacts and describe.