

**ENVIRONMENT IMPACT ASSESSMENT
(REEN 6143)**

Time Allotted : 3 hrs

Full Marks : 70

Figures out of the right margin indicate full marks.

Candidates are required to answer Group A and any 5 (five) from Group B to E, taking at least one from each group.

Candidates are required to give answer in their own words as far as practicable.

**Group – A
(Multiple Choice Type Questions)**

1. Choose the correct alternative for the following: **10 × 1 = 10**
- (i) The Campaign Slogan of World Environment Day 2022 was:
(a) Only one Earth (b) Beat Plastic Pollution
(c) Air Pollution (d) Desert & Desertification.
- (ii) Identify the Oldest Environment Act/Rules of our country
(a) Water Act (b) Bengal Smoke Nuisance Act
(c) Air Act (d) E-waste (Management) Rules
- (iii) As per the CPCB standard for Type A water signifies
(a) Untreated Sewage
(b) Water having requisite Bathing Standard
(c) Drinking Water
(d) Treated wastewater for irrigation purpose.
- (iv) Consent to Establish is also known as
(a) Consent to Operate (b) Consent to demolish
(c) NOC (d) None of (a), (b) & (c).
- (v) Identify the parameter which is not related to Green Building
(a) Solar passive architecture (b) Installation of Louvre System
(c) Color of the building (d) Installation of PV at windows
- (vi) Identify the component not needed for Rapid EIA
(a) Live stock assessment (b) Water pollution assessment
(c) Assessment of Ethnic Culture (d) Air pollution assessment
- (vii) In a Renewable Energy Industry with no structured sewerage system, identify the methodology of black water remediation
(a) septic tank (b) en-bio-toilet
(c) in situ remediation (d) open dumping
- (viii) Identify the most modern Environment Act/Rules of our country.
(a) Water Act (b) Bengal Smoke Nuisance Act
(c) Air Act (d) E-waste (Management) Rules

- (ix) Sewage is also termed as
(a) Black water (b) Grey water (c) Moss (d) Sullage
- (x) Life Cycle Assessment has _____ scope as that of EIA.
(a) narrower (b) broader (c) same (d) entirely different

Group- B

2. (a) Calculate the suspended particulate concentration from the field data obtained in an Envirotech/NEERI Design High Volume sampler:
Average pressure of the day at station level = 740 mm of Hg
Average temperature = 29^oC; Sampling rate = Clean filter: 1.8 Cu m/min
Filter after exposure = 1.6 cu. m/min;
Tare weight of filter before exposure = 3.210 g
Tare weight of filter after exposure = 3.725 g
N. B. 1) Sampling time is round the clock; 2) Assume Air as ideal gas.
[[CO1] (Evaluate/HOCQ)]
- (b) Enumerate Six steps to reduce Carbon foot print by the use of renewable energy devices.
[[CO3] (Understand/LOCQ)]
6 + 6 = 12
3. (a) Enumerate the steps to obtain Consent to Establish of a plant manufacturing Solar PV. modules.
[[CO3] (Remember/LOCQ)]
- (b) Discuss the principle and operation of a RSPM Sampler. [[CO1](Analyze/IOCQ)]
6 + 6 = 12

Group - C

4. A solar power plant operated in a temperate area had an aerated lagoon (oxidation ditch) as STP with effective area of 9290 m². For better space utilization, the organization decided the effective area of ditch by half by doubling the depth for the following conditions:
Wastewater Flowrate Q = 1Mgal/d (3800 m³/d); Wastewater temperature (influent) T_i= 60^oF (15.6^oC); Ambient air Temperature T_a = 20^oF (-6.7^oC)
Estimate the lagoon water temperature for both the cases. [[CO3] (Evaluate/HOCQ)]
12
5. Delineate a case study of highlighting an STP combined with Treatment of canteen waste for bio-gas generation.
[[CO3] (Analyze/IOCQ)]
12

Group - D

6. (a) Enumerate different Solid Waste Collection and Disposal Methodologies practiced in Metro cities.
[[CO1] (Remember/LOCQ)]
- (b) Analyze various recycle/re-use methodologies for E-waste in order to achieve sustainable development.
[[CO3] (Analyze/IOCQ)]
6 + 6 = 12

7. (a) Discuss various Hazardous aspects associated with a Hydro Power Plant.
[(C03) (Remember/LOCQ)]
(b) Enumerate few suitable methodology of LED Lamps Recycling Technology.
[(C03) (Remember/LOCQ)]
6 + 6 = 12

Group – E

8. Enumerate the type of projects those need EIA clearance irrespective of the cost of the project as per notifications issued by MOEF in India. [(C02)(Remember/LOCQ)]
12
9. (a) Discuss various hazardous aspects associated with a solar power plant.
[(C03)/LOCQ, Remember]
(b) In you opinion, what should be the mitigation measures through EMP?
[C02, IOCQ, Analyze]
6 + 6 = 12

Cognition Level	LOCQ	IOCQ	HOCQ
Percentage distribution	50	31.25	18.75

Course Outcome (CO):

At the end of the course the students should be able:

1. The students will be able to identify and analyze the Basics of Environmental Engineering Principles and legislations prevalent in India under the purview of Renewable Energy field.
2. The students will be able to conduct EIA Studies.
3. The students will be able to identify new technologies suitable to get EIA certification.
4. The students will be able to implement Do's & Don'ts practices for Renewable Energy Endeavours.

*LOCQ: Lower Order Cognitive Question; IOCQ: Intermediate Order Cognitive Question; HOCQ: Higher Order Cognitive Question

