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PRESIDENCY UNIVERSITY BENGALURU

**SET-B**

SCHOOL OF ENGINEERING

**END TERM EXAMINATION – MAY/JUNE 2024**

**Semester :** Semester VI - 2021

**Course Code :** CIV3040

**Course Name :** Environmental Impact Assessment for Infrastructure Projects

**Program :** B.Tech. Civil Engineering

**Date :** June 21, 2024

**Time :**1:00PM-4:00 PM

**Max Marks :** 100

**Weightage :** 50%

**Instructions:**

1. *Read all questions carefully and answer accordingly.*
2. *Question paper consists of 3 parts.*
3. *Scientific and non-programmable calculator are permitted.*
4. *Do not write any information on the question paper other than Roll Number.*

# PART A

## Answer any 10 Questions 10\*2 = 20M

* 1. EIA is an early warning process that verifies the enforcement of environmental policies. Define EIA.

(CO1) [Knowledge]

* 1. Air pollution means the presence of chemicals or compounds in the air which are usually not present and which lower the quality of the air or cause detrimental changes to the quality of life. Classify air pollutants.

(CO2) [Knowledge]

* 1. Public involvement is a fundamental principle of EIA. Define Public Participation in EIA.

(CO3) [Knowledge]

* 1. Networks are those methodologies which integrate impact causes and consequences through identifying interrelationships between casual actions and the impacted environmental factors, including those representing secondary and tertiary effects. List the advantages and disadvantages of Network method.

(CO4) [Knowledge]

* 1. Environment impact assessment is to ensure that decision makers consider the environmental impacts when deciding whether or not to proceed with a project. Write the three core values of EIA.

(CO1) [Knowledge]

* 1. General impacts on the water Environment are related to hydraulic and hydrological changes as well as to the introduction of suspended and dissolved materials into receiving waters. Name the projects which create impact on water environment.

(CO2) [Knowledge]

* 1. One of the key components of EIA is public participation, which involves engaging and consulting with the people and groups who may be affected by or interested in the project or policy. Why public Involvement is needed?

(CO3) [Knowledge]

* 1. The government of India, by its gazette notification [No. GSR 329 (E)] of March 13, 1992, made it mandatory for all industries to provide annual environmental audit reports of their operations, beginning with 1992-93. What are the aims of environmental audit?

(CO4) [Knowledge]

* 1. EIA 2006 was issued on 14th September 2006, in supersession of EIA 1994, except in respect of things done or omitted to be done before such supersession. The Notification is issued under relevant provisions of the Environment (Protection) Act, 1986. Identify constraints in environmental clearance process under EIA notification, 1994

(CO1) [Knowledge]

* 1. We know that a sound is a form of energy. Sometimes the sound can be soothing to listen to and, at times, loud to hear. Sound can travel in the air and is produced by the vibration of objects. Regular exposure to a higher sound level that impacts humans and other living organisms. Write the effects of noise on human health.
  2. Elaborate the abbreviations SEAC, TOR, EC and GC used in EIA.

(CO2) [Knowledge]

(CO3) [Knowledge]

* 1. Environmental Audits are very important, especially if we want a healthy and safe environment for your organization. Nowadays, almost everyone is concerned about the environment and its safety. Consequently, the organizations are under high pressure for minimizing the harmful effects of their activities on the environment. What is the need of energy audit?

(CO4) [Knowledge]

* 1. EIA Methodologies developed to identify, predict and value changes of an action. Write about overlay mapping methodology.

(CO4) [Knowledge]

* 1. EIA was first introduced in the USA under the Environmental Policy Act (1969). Since then it has evolved and a variety of offshoot assessment techniques have emerged (focusing, for example on social, biodiversity, environmental health and cumulative effects and risk) acting as a broader impact assessment toolkit. Define Screening in EIA process.

(CO1) [Knowledge]

# PART B

## Answer any 8 Questions 8\*5 = 40M

* 1. Impact analysis stage of EIA identifies and predicts the likely Environmental and social impact of the proposed project and evaluates the significance. Describe the Ad hoc method of environmental impact identification.

(CO4) [Comprehension]

* 1. Household combustion devices, motor vehicles, industrial facilities and forest fires are common sources of air pollution. Pollutants of major public health concern include particulate matter, carbon monoxide, ozone, nitrogen dioxide and sulfur dioxide. Explain oxides of nitrogen pollutant sources and effects on human health.

(CO2) [Comprehension]

* 1. Public Participation typically involves only those who have a stake in the decision. Paraphrase about Passive and Active stakeholders.

(CO3) [Comprehension]

* 1. The term "environmental impact assessment" (EIA) is usually used when applied to actual projects by individuals or companies. Environmental assessments may be governed by rules of administrative procedure regarding public participation and documentation of decision making, and may be subject to judicial review. Explain the objectives of EIA.

(CO1) [Comprehension]

* 1. Environmental audit checks whether the company has complied with the *environmental* regulations and requirements, and achieved the *environmental* goals set by them. Interpret the features of environmental audit.

(CO4) [Comprehension]

* 1. Water bodies can be polluted by a wide variety of substances, including pathogenic microorganisms, putrescible organic waste, toxic chemicals and sediments etc. In relation to this differentiate Point and Non-point sources.

(CO2) [Comprehension]

* 1. EIA purpose is to thoroughly examine the potential environmental consequences of the airport on the surrounding area before any construction begins. This allows decision-makers to weigh the project's benefits against its drawbacks and determine if mitigation measures can lessen any negative impacts. Describe the Environmental monitoring and Periodic Audits in airport construction.

(CO3) [Comprehension]

* 1. Environmental impact assessment helps to determine the compatibility of the proposed human activities with the environmental policy and legislation. Summarize the limitations of Environmental impact studies.

(CO1) [Comprehension]

* 1. Environmental audit provide your organization with third-party verification and reviewing of your environmental initiatives and improvements. The experienced environmental auditors of the particular certification body that you will choose, will guide you to work on maintaining lower energy and raw materials use, minimizing waste and pollution, and preventing risks of accidents and emergency situations. Explain Targeted Energy Audits.

(CO4) [Comprehension]

* 1. Ambient noise Quality Standards in Respect of Noise is notified under Noise Pollution (Regulation and Control) Rules, 2000. Interpret the standard Noise levels based on type of area.

(CO2) [Comprehension]

* 1. Environmental clearance (EC) is required in respect of all new projects or activities listed in the Schedule to the 2006 notification and their expansion and modernization, including any change in product –mix. Explain the developing activities requiring EC.

(CO1) [Comprehension]

* 1. As per the EIA notification of 14th September 2006 and its amendment dated 1st December 2009, highway projects are divided into two categories. Explain the categories of highway projects.

(CO3) [Comprehension]

# PART C

## Answer any 4 Questions 4\*10=40M

* 1. The success of an environmental impact assessment depends on the adequate identification of the potential impacts of the project on the environment. The environmental impact identification system (EIIS) aggregates the previous environmental evaluations similar to the current problem in order to propose possible impacts. The environmental impact assessments are stored on a computer in the form of *impact networks*. Demonstrate the network method of impact identification in the form of flow chart in road sector.

(CO4) [Application]

* 1. The approaches to *public involvement* in *EIA* are distinctive and relatively separate. There are many different methods and tools for public participation in EIA. Articulate public participation techniques.

(CO3) [Application]

* 1. Environmental audits have been conducted by SAI India for the last 25 years. This process was formalized with the introduction of specialized guidelines {MSO (Audit) 2002} for conduct of environmental audits. Articulate the environmental audit activities.

(CO4) [Application]

* 1. Projects or programmes have significant impacts on the local population. Whilst the aim is to improve the well being of the population, a lack of understanding of the people and their society may result in development that has considerable negative consequences. Illustrate the significance of Consult, Involve and Collaborate in public participation of EIA process.

(CO3) [Application]

* 1. Environmental Management Audits Evaluate EMS and ensure the efficiency of the system. It helps the organization to understand its performance on its own environmental performance standards. It reviews and evaluates the organization’s environmental legal requirements and assesses compliance with those requirements. Illustrate the scope of Environmental audit.

(CO4) [Application]

* 1. Enhancing the identification of the major environmental impacts of construction processes will help to improve the effectiveness of environmental management systems. Furthermore, prediction of the correlated environmental impacts of construction before the construction stage, will lead to improvements in the environmental performance of construction projects and sites. Demonstrate the strategies which can be employed to minimize construction's environmental impact.

(CO3) [Application]