

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: B.ARCH
BRANCH: ARCHITECTURE**

**SEMESTER : IX
SESSION : MO/2025**

SUBJECT: AR605 URBAN ECOLOGY AND ENVIRONMENTAL PLANNING

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

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| Q.1(a) Briefly discuss India's environment related challenges in context to its increasing population and the current trend of urbanization. | [5] | 1,2,3 | Understand, Analyse | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Q.1(b) List the various types of environmental pollution and briefly discuss their pervasive effects. | [5] | 1,2,3 | Understand, Remember, Analyse | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Q.2(a) Write a brief note on 'Urban Metabolism'. Discuss two approaches for assessing it. | [5] | 1,2 | Understand, Remember, Analyse | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Q.2(b) List the key characteristics of ecological planning. In context to a suitable urban context, list all the ecological determinants that are necessary to be considered in the process. Further, enumerate upon the significance of considering ecological surveys in urban planning and development exercises. | [5] | 1,2,3 | Understand, Remember, Apply | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Q.3(a) Write short notes on the following: <ul style="list-style-type: none"> • Grey and Brown Smog • Role of Central and State Pollution Control Boards | [5] | 1,2,3 | Understand, Remember | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Q.3(b) i) Write a short note on the essence of 'Environmental Impact Assessment', as a decision-making tool in the Indian context. List the steps of EIA and discuss any two essential steps in detail. | [5] | 1,2,3 | Understand, Remember, Analyse | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Q.4(a) Discuss any two strategies, suggested by the 'National Mission on Sustainable Habitat' for the development of sustainable habitats in India, which you think are most essential however challenging to implement in the Indian context. | [5] | 1,2,3 | Understand, Remember, Analyse | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Q.4(b) Compare between the Traditional Management approach and the Integrated Environment Management (IEM) approach, and discuss why it is necessary to consider IEM for Sustainable Development Goals. | [5] | 1,2,3 | Understand, Analyse, Evaluate | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Q.5(a) Match the following: | [5] | 1 | Understand | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 5%; text-align: center;">1</td> <td style="width: 35%;">Kyoto Protocol</td> <td style="width: 5%; text-align: center;">i</td> <td style="width: 55%;">limiting warming to 1.5 to 2 degrees C</td> </tr> <tr> <td style="text-align: center;">2</td> <td>ECBC+</td> <td style="text-align: center;">ii</td> <td>code for buildings or building complexes that have a connected load of 100 kW</td> </tr> <tr> <td style="text-align: center;">3</td> <td>Air (Prevention and Control of Pollution) Act, 1981</td> <td style="text-align: center;">iii</td> <td>only treaty with binding limits on GHG emissions</td> </tr> <tr> <td style="text-align: center;">4</td> <td>RAMSAR Convention</td> <td style="text-align: center;">iv</td> <td>tier of building energy performance</td> </tr> <tr> <td style="text-align: center;">5</td> <td>COP 21, 2015 [Paris Agreement]</td> <td style="text-align: center;">v</td> <td>one-stop shop for climate informed actions to ensure a sustainable urban future for India</td> </tr> <tr> <td style="text-align: center;">6</td> <td>Central Pollution Control Board</td> <td style="text-align: center;">vi</td> <td>created United Nations Environment Program</td> </tr> <tr> <td style="text-align: center;">7</td> <td>Stockholm Conference</td> <td style="text-align: center;">v</td> <td>sets standards for streams and wells</td> </tr> <tr> <td style="text-align: center;">8</td> <td>Climate Centre for Cities (C-Cube)</td> <td style="text-align: center;">viii</td> <td>provides for the prevention, control and abatement of air pollution in India</td> </tr> <tr> <td style="text-align: center;">9</td> <td>ECBC</td> <td style="text-align: center;">ix</td> <td>enacted after the aftermath of Bhopal Gas tragedy</td> </tr> <tr> <td style="text-align: center;">10</td> <td>Environment Protection Act (EPA) 1986</td> <td style="text-align: center;">x</td> <td>recognises wetlands of international importance</td> </tr> </tbody> </table> | 1 | Kyoto Protocol | i | limiting warming to 1.5 to 2 degrees C | 2 | ECBC+ | ii | code for buildings or building complexes that have a connected load of 100 kW | 3 | Air (Prevention and Control of Pollution) Act, 1981 | iii | only treaty with binding limits on GHG emissions | 4 | RAMSAR Convention | iv | tier of building energy performance | 5 | COP 21, 2015 [Paris Agreement] | v | one-stop shop for climate informed actions to ensure a sustainable urban future for India | 6 | Central Pollution Control Board | vi | created United Nations Environment Program | 7 | Stockholm Conference | v | sets standards for streams and wells | 8 | Climate Centre for Cities (C-Cube) | viii | provides for the prevention, control and abatement of air pollution in India | 9 | ECBC | ix | enacted after the aftermath of Bhopal Gas tragedy | 10 | Environment Protection Act (EPA) 1986 | x | recognises wetlands of international importance | | | |
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| Q.5(b) Discuss the significance of Stockholm and the Rio Conference hosted by the United Nations related to human interactions with the environment. | [5] | 1,2,3 | Understand, Remember, Analyse | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |