

# CBCS SCHEME

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18CV654

## Sixth Semester B.E. Degree Examination, Dec.2023/Jan.2024 Sustainability Concepts in Civil Engineering

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

- 1 a. Define sustainability, need of sustainability and how we can achieve sustainability in civil engineering. (10 Marks)
- b. Briefly explain environmental legislations in India and significance of water act. (10 Marks)

OR

- 2 a. With neat sketch explain clean development mechanism. (10 Marks)
- b. Briefly explain with suitable points challenges for sustainable development. (10 Marks)

### Module-2

- 3 a. What do you mean by resource degradation? Explain with examples. (10 Marks)
- b. Explain in detail regional and local environmental issues with solutions. (10 Marks)

OR

- 4 a. What is life cycle analysis? Explain with a neat sketch. (10 Marks)
- b. What are environmental management standards? Briefly explain ISO 14000 series. (10 Marks)

### Module-3

- 5 a. Define sustainable habitat. How the sustainable habitat can be achieved? (10 Marks)
- b. What do you mean by green material for construction? Explain. (10 Marks)

OR

- 6 a. Explain briefly about green building certifications. (10 Marks)
- b. Explain the procedure of IGBC certification for buildings. (10 Marks)

### Module-4

- 7 a. List and explain different energy sources. (10 Marks)
- b. Explain the basic concepts in conventional and non-conventional sources of energy with example. (10 Marks)

OR

- 8 a. Explain with a neat sketch small hydro-plants with its working principle. (10 Marks)
- b. Explain how the solar energy is harnessed and the principle behind it. (10 Marks)

### Module-5

- 9 a. Explain green engineering concepts atleast with one example. (10 Marks)
- b. What is sustainable urbanization? Explain. (10 Marks)

OR

- 10 a. How the industrialization and poverty reduction can be achieved. (10 Marks)
- b. How the material selection is done in the industrial process? Explain. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.