

May- June 2012



[4161] – 105

Seat No.	
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**F.E. (Semester – I) Examination, 2012**  
**BASIC CIVIL AND ENVIRONMENTAL ENGINEERING**  
**(2008 Pattern)**

Time : 3 Hours

Max. Marks :100

- Instructions :** 1) Attempt Q. 1 or Q. 2, Q. 3 or Q. 4, Q. 5 or Q. 6 from Section – I and Q. 7 or Q. 8, Q. 9 or Q. 10, Q. 11 or Q. 12 from Section II.
- 2) Answers to the **two** Sections should be written in **separate** books.
- 3) **Neat** diagrams must be drawn **wherever** necessary.
- 4) Black figures to the **right** indicate **full** marks.
- 5) Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and steam tables is **allowed**.
- 6) Assume suitable data, **if necessary**.

**SECTION – I**

1. a) Describe the role of Civil Engineer in the activities required for the construction of a big factory building. 6
- b) How the study of Environmental Engineering helps in day to day life. 6
- c) Briefly explain any two application of following :
  - i) Geotechnical Engineering
  - ii) Surveying. 4

OR

2. a) Explain the need of infrastructure development with example. Also state activities in such development. 6
- b) Bring out the difference between Roadways and Railways with respect to various points. 6
- c) Define the term 'GAUGE'. Draw neat sketch to show it properly. Also, state its various types with their dimensions. 4

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3. a) How do you differentiate between shallow and deep foundation ? Also state important functions of foundation. 6
- b) Compare natural sand with artificial sand. Also mention role of cement in construction. 6
- c) Explain the importance of recycling of materials. 4

OR

4. a) What is superstructure ? State various loads considered for design of foundation. Also mention functions of plinth. 6
- b) What is Masonary ? State various fundamental requirements of masonry. 6
- c) Enlist various construction materials and state their functions in construction. 4
5. a) Compare the following : 8
- i) Simple levelling and differential levelling.
  - ii) Height of collimation and Rise and fall method.
  - iii) GPS and GIS.
  - iv) Map and plan.
- b) Define level line and contour line. 2
- c) Readings taken successively on staff position in a levelling work are 2.065, 1.470, 1.250, 3.195, 2.455. Level was shifted after second reading. If R.L. of first position of staff is 250.00 M, find R.L of other staff positions. Use rise and fall method. Show arithmetical check and sample calculations. 8

OR

6. a) What are the points to be remembered while entering records in a level book ? 4
- b) Define surveying. Explain any one principle of surveying. 4
- c) Write short note on digital planimeter. 6
- d) State the advantages of Electronic Distance measurement over the conventional measurement methods. 4



SECTION – II

7. a) What is nitrogen cycle ? Explain with neat sketch. 4
- b) How solid waste of a town is collected ? Explain composting method of solid waste disposal. 6
- c) Discuss in brief biotic and abiotic components of ecosystem. 4
- d) What is EIA ? What is need of it ? 2

OR

8. a) Explain with a neat sketch carbon cycle. 4
- b) Discuss in detail various ill effects of technological advancements on Nature. 4
- c) Enlist various natural resources. Also mention need of conserving natural resources. 4
- d) Write note on E-waste and its management to avoid pollution. 4
9. a) Explain following principles of building planning with neat sketches. 6
- i) Grouping ii) Privacy
- b) Define F.S.I and state its necessity. Also find out how much area can be constructed on 2<sup>nd</sup> floor when a plot is having dimensions 30 m × 40 m. A building constructed on it occupies 400 m<sup>2</sup> on ground and 350 m<sup>2</sup> on first floor. Permissible F.S.I is 0.80. 6
- c) With the help of sketches, state the necessity of set back distance and side margins for a building. 4

OR

10. a) Write a brief note on the following principles of planning. 6
- i) Aspect ii) Prospect
- b) Explain with examples, how grouping, privacy and circulation are interrelated and are therefore to be achieved by proper planning. Draw sketches if necessary. 6
- c) Write a note on 'necessity of building by laws'. 4





11. a) Differentiate between Conventional and Non-conventional energy sources with reference to various points. 6
- b) State the sources of noise pollution. Mention various effects of noise pollution. Also state the methods of controlling the noise pollution. 6
- c) Define air pollution. Describe in brief various measures adopted for controlling air pollution. 6

OR

- 12.a) Explain in detail the effects of Industrialisation and urbanization on Environment. 6
- b) Comment on "Need for harnessing alternative energies to meet the increased demand". 6
- c) Write note on : 6
- i) Green House Effect
  - ii) Land Pollution.

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