



F.E. (Sem. – I) Examination, 2011
BASIC CIVIL AND ENVIRONMENTAL ENGINEERING
(2008 Pattern)

Time : 3 Hours

Max. Marks : 100

- Instructions:** 1) Answers to the *two* Sections should be written in *separate* books.
- 2) *Neat* diagrams must be drawn *wherever* necessary.
- 3) *Use* of Logarithmic Tables, Slide Rule, Mollier Charts, Electronic Pocket Calculator and Steam Tables is *allowed*.
- 4) Assume *suitable* data, if *necessary*.

SECTION – I

1. A) Explain the role of civil engineer in construction of expressway. 5
- B) Explain the importance of an interdisciplinary approach in engineering. 5
- C) Explain two application of : 6
 - a) Project management.
 - b) Environmental Engineering.
 - c) Earthquake engineering.

OR

2. A) Explain two application of : 6
 - a) Remote sensing.
 - b) Town planning.
 - c) Fluid mechanics.
- B) Write a note on “Need and application of earthquake engineering”. 5
- C) Explain necessity and application of project management. 5

P.T.O.



3. A) Write a short note on : “Automation in construction industry”. 5
- B) Explain the uses of steel and its types. 6
- C) What do you understand by the following terms ? 5
- a) M15 (1:2:4) b) D.P.C c) P.S.C d) P.C e) P.C.C

OR

4. A) State and explain differential settlement. 5
- B) Explain artificial sand and its properties. 5
- C) Enlist any four materials used in construction and give two uses of each of them. 6
5. A) Following table shows some reading in a check levelling work (started and ended on same B.M.). Calculate the missing readings shown as ‘X’. Tabulate the same and apply usual arithmetical check. 6

ST NO	B.S	I.S	F.S	Rise	Fall	R.L.	Remarks
1	X					463.875	B.M.1
2		X		0.550		X	
3	0.965		3.655		X	X	C.P. 1
4	X		1.400		X	461.885	C.P. 2
5			1.025	X		463.875	B.M.1

- B) Differentiate between :
- a) Collimation plane method and rise and fall method.
- b) Permanent bench mark and Arbitrary bench mark. 6
- C) Define contour, its uses and characteristics. 6

OR



6. A) What are the advantages and limitation of GPS ? 6
- B) Differentiate between : 6
- a) Permanent bench mark and Arbitrary bench mark.
 - b) Contour interval and Horizontal equivalent.
- C) Levelling work was carried out on a continuously sloping ground using a Dumpy Level and 4 m leveling staff. The readings were 6
- 0.500, 1.00, 0.750, 1.000
1.500, 0.500 and 1.500
- Rule out a page of level field book for RISE and FALL method and determine the reduced levels of all staff stations. The starting point happened to be an A.B.M. whose R.L. is 100.500 M. Apply usual arithmetic check also.

SECTION – II

7. A) State the characteristics of ecosystem. 5
- B) What is solid waste management ? Explain steps involved in it. 5
- C) Write a short note on : 6
- a) Disposal of electronics waste
 - b) Grassland ecosystem.

OR

8. A) Explain in detail : composting as a technique for management of solid waste. 5
- B) Write a short note on : 6
- a) EIA-overlay method
 - b) Hydrological cycle.
- C) Explain the role of engineers towards achieving sustainable development. 5
9. A) State the factors influencing site selection for a factory building and residential building. 6
- B) State the minimum dimension of various components of building. 5
- C) Enlist any four principles of building planning. Explain with a neat sketch 'Prospect'. 5

OR



10. A) What is meant by 'Building bye-laws' ? Write down the specific bye-laws for : 6
- 1) Open space requirement.
 - 2) Height of building.
 - 3) F.A.R.
- B) Define building line and control line, also state the advantages of set back distance. 4
- C) Differentiate between : 6
- 1) Building planning principles and building bye-laws.
 - 2) Aspect and orientation.
11. A) Explain the causes, effects and control measures of water pollution. 6
- B) State the methods of harnessing-solar energy. 6
- C) Explain the various techniques to control air pollution. 6

OR

12. A) Explain in detail various possible measures to control noise pollution. 6
- B) State the advantages and disadvantages of non-conventional source of energy. 6
- C) Explain with a suitable sketch, the working of geothermal energy plant. 6