



[4656] – 15

Seat No.	
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F.E. (Semester – I) Examination, 2014
BASIC CIVIL AND ENVIRONMENTAL ENGINEERING
(Old) (2008 Pattern)

Time : 3 Hours

Max. Marks : 100

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

SECTION – I

1. a) Explain in brief the role of civil engineer in Construction of a Residential Building. **6**
b) Draw a neat labelled diagram of Cross section of Rigid and Flexible Pavement. **(2+2)**
c) State any six practical applications of Fluid Mechanics. **(1×6)**
- OR
2. a) Explain in brief the role of civil engineer in planning and construction of Commercial Complex. **(1×6)**
b) Define gauge. State various types of gauges with their gauge distance. **(1+3)**
c) Explain in brief the following branches of civil Engineering. **(3+3)**
1) Soil Mechanics
2) Construction Engineering
3. a) State comparison between Load Bearing Structure and Framed Structure. **(1×6)**
b) Draw a neat labelled sketches of the following : **(2+2)**
1) Wall Footing
2) Combined Footing
c) Explain in brief the following : **(2+2+2)**
1) Dead Load
2) Superimposed
3) Wind Load.

OR

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4. a) State any three types of Cement. Also state the specific use of each type of cement. **(3+3)**
 b) State any four characteristics of Good Building stone. **(1×4)**
 c) Write a short note on automation in Construction. **6**
5. a) The following consecutive readings were taken with a level and 4 m leveling staff at a common interval of 20 m on continuously sloping ground. The readings are, 3.480, 2.695, 1.440, 0.855, 2.115, 1.640, 0.750, 3.465, 2.110, 1.110 and 0.655. The first reading was taken on Permanent Bench of RL 550.545. Calculate the Reduced Levels of remaining staff stations by rise and fall method. Apply Usual Arithmetic check. **6**
- b) Define the following : **(2+2+2)**
 1) Change Point 2) Vertical Axis 3) Back Sight Reading
- c) State any six uses of contour Maps. **(1×6)**
- OR
6. a) Define contour. State any two characteristics of contour Lines. **(2+4)**
 b) State any three Practical Applications of the GPS and GIS. **(3+3)**
 c) The following consecutive readings were taken with a level and 4 m leveling staff. The readings are, 2.865, 3.345, 2.935, 1.950, 0.855, 2.790, 2.640, 1.545, 0.935, 0.865 and 0.190. The level was shifted after Fifth and Eighth reading. The first reading was taken on Permanent Bench of RL 101.856. Calculate the Reduced Levels of remaining Staff stations by Collimation Plane Method. Apply Usual Arithmetic check. **6**

SECTION – II

7. a) Explain in brief the Biotic and a biotic components of Ecosystem. **(3+3)**
 b) State and explain the components of Forest Ecosystem. **6**
 c) State various natural resources. What is the need of conserving them ? **(1+3)**
- OR
8. a) What is Solid waste ? Explain in brief the composting as a method of disposal of solid waste. **(2+4)**
 b) Write a short note E-Waste. **6**
 c) Explain with a neat sketch Carbon Cycle. **4**
9. a) Explain in brief the following Principles of building Planning : **(3+3)**
 1) Privacy 2) Grouping
 b) Write a short note on Green Building. **6**
 c) State the necessity of Building Bye Laws. **4**
- OR
10. a) Define FSI. Determine the total carpet area of a Two storeyed building using following data : **(2+4)**
 Plot Area = 50 m x 40 m, Permissible FSI = 1.5, Ratio of Carpet Area to Built Up Area = 0.80.



b) State the various points to be considered while selecting a site for Residential Building. **(1×6)**

c) Explain in brief the “Elegance” as a principle of building planning. **4**

11. a) Write a short note on Green House Effect. **4**

b) Explain in brief why we prefer to use conventional sources of energy for our daily needs. **6**

c) Explain in brief the Mechanism of production of Biogas energy. **6**

OR

12. a) Write a short note on Air Pollution. **4**

b) Explain in brief the various sources of Noise Pollution. **6**

c) As a responsible Member of the Civil Society, how will you contribute yourself to reduce the Water Pollution ? **6**
