



[4261] – 105

Seat
No.

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**F.E. (Common) (Semester – I) Examination, 2012
BASIC CIVIL AND ENVIRONMENTAL ENGINEERING
(2008 Pattern)**

Time : 3 Hours

Max. Marks : 100

SECTION – I

1. a) Explain the role of civil engineer in the construction of a power house. 6
- b) Differentiate between roadways and railways. 5
- c) Write a short note on Quantity surveying and valuation. 5
- OR
2. a) Explain in brief the general role of civil engineer in any construction work. 5
- b) Define fluid mechanics. Explain in brief the practical applications of fluid mechanics. 5
- c) Explain in brief the following terms : 6
 - 1) Hypocentre
 - 2) Epicenter
 - 3) Magnitude of earthquake
 - 4) Intensity of earthquake.
3. a) Define settlement. What are the various causes of settlement ? 6
- b) Write a short note on types of cement. 5
- c) Differentiate between load bearing structure and framed structure. 5

OR

P.T.O.



- 4. a) Draw neat sketches of the following : **6**
 - 1) Simple wall footing
 - 2) Trapezoidal combined footing
 - 3) End bearing pile.

- b) State comparison between first class bricks and second class bricks. **5**

- c) Explain in brief the following : **5**
 - 1) Dead load
 - 2) Live load.

- 5. a) State any three modern electronic equipments. Also mention the merits and demerits of each in brief. **6**

- b) Draw a neat sketch of the details of graduations of the 4 m levelling staff. (only show one decimeter length of staff). **6**

- c) Define contour. State any four uses of contour maps. **6**

OR

- 6. a) Following consecutive staff readings were taken with the help of a dumpy level and 4 m staff. The R.L. of the first station was known to be 55.275 m. Calculate the reduced levels of the remaining stations by rise and fall method. Apply usual arithmetic check. The readings are, 2.535, 3.675, 1.505, 0.985, 2.585, 0.955, 2.005 and 0.855. **8**

- b) What is GPS ? Explain in brief the various components of GPS. **4**

- c) Define the following terms : **6**
 - 1) Level surface
 - 2) Datum surface
 - 3) Change point
 - 4) Station.



SECTION – II

7. a) Explain with a neat sketch : Hydrological cycle. **6**
b) State various methods of carrying out EIA. Explain any one in brief. **6**
c) Write a short note on sustainable development. **6**

OR

8. a) State various types of Ecosystem. Mention the Biotic and Abiotic components of forest ecosystem. **6**
b) Discuss in brief the impact of human behaviour on the environment. **6**
c) Write a short note on solid waste management. **6**

9. a) State the various principles of building planning. Explain any one in brief. **5**
b) Determine the carpet area per floor of a two storeyed residential building from the following data : **6**
1) Plot area = 1200 m^2
2) F.S.I. allowed = 0.9
3) Ratio of carpet area to built up area = 0.7

Assume equal built up area on each floor.

- c) Write a short note on Green Building. **5**

OR

10. a) State the various points to be considered while selecting a site for a residential building. **5**
b) If the permissible FSI for a three storeyed building is 0.9 and the total plot area is 500 m^2 and the ratio of carpet area to built up area is 0.7. Calculate the maximum permissible carpet area on each floor assuming equal carpet area on each floor. **6**
c) What is F.S.I. ? State its importance. **5**



11. a) Write a short note on global warming. **5**
- b) State comparison between renewable and nonrenewable energy sources. **6**
- c) Write a short note on Noise pollution. **5**

OR

12. Write short notes on the following : **(4×4=16)**

- 1) Wind energy
- 2) Water pollution
- 3) Green House Effect
- 4) Causes and sources of air pollution.