B.Tech-1st

Basic Civil Engineering

Full Marks : 50

Time : $2\frac{1}{2}$ hours

Answer **all** questions

The figures in the right-hand margin indicate marks

Symbols carry usual meaning

1. Answer *all* questions : 2×5

   (*a*) What are the characteristics of a good brick ?

   (*b*) Make a distinction between piers and piles.

   (*c*) What is meant by sight distance ? Explain importance of sight distance in geometric design of pavement ?

(2)

(d) State per capita demand? Write down the value of average demand for different purposes.

(e) Compare lift and escalators.

2. (a) Write six important factors to be considered in the selection of site for a building.   4

(b) Discuss the type of Buildings as per NBC.   4

Or

(a) Explain different types of footing with sketch.   4

(b) Explain the importance of civil engineering in infrastructural development of the country.   4

3. (a) Explain the procedure to determine various durability properties of building materials.   4

(3)

(b) Differentiate between Quick Setting Cement and Rapid Hardening Cement.   4

Or

(a) Write about the advantages and disadvantages of steel as a construction material.   4

(b) Explain the different types of bonds in brick masonry and their uses.   4

4. (a) Classify road systems in India as per IRC.   4

(b) Explain CBR test and its importance in design of flexible pavement.   4

Or

(a) What are the aircraft characteristics affecting airport design ?   4

(b) Explain the advantages of highways over railways.   4

5. (a) Differentiate between coagulation and filtration.   4

(b) Explain each component of a water treatment process with the help of a flow diagram.   4

Or

(a) Outline the various sources of water along with suitable examples.   4

(b) What are the factors influencing the population forecasting ?   4

6. (a) What are the types of irrigation and explain the importance of irrigation ?   4

(b) Describe the layout of a canal irrigation system.   4

Or

(a) What are the factors affecting the selection of site for the construction of dam ?   4

(b) Give the difference between Weir and Barrage in brief.   4

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