

Total No. of Questions :12]

SEAT No. :

**P2806**

[Total No. of Pages :4

**[4958] - 105**

**T.E. (Civil)**

**INFRASTRUCTURE ENGINEERING AND CONSTRUCTION  
TECHNIQUES**

**(2008 Pattern) (Semester - I)**

*Time : 3 Hours]*

*[Max. Marks :100*

*Instructions to the candidates:*

- 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**

- Q1)** a) Compare Railway Transportation with Road Transportation. **[6]**
- b) Define track drainage. Explain the significance of track drainage. **[4]**
- c) Describe the functions and requirements of rails in a railway track. **[6]**

**OR**

- Q2)** a) Explain with the help of sketches the following: **[6]**
- i) Ballast cushion
  - ii) Shoulder ballast
  - iii) Crib ballast
- b) What is the necessity of welding of rails. State various methods of welding. **[4]**
- c) Explain the necessity of sleepers in railway track. What are the desirable qualities of good sleepers. **[6]**

**P.T.O.**

- Q3)** a) Explain with the help of a neat sketch “ Negative super elevation”. [4]  
b) Define the following terms: [6]  
i) Facing Points  
ii) Trailing points  
iii) Left hand turnont  
c) Discuss the merits and demerits of Measure Shovel Packing. [6]

OR

- Q4)** a) Explain in brief the need of Metro railway in Urban areas. [4]  
b) Define the following: [6]  
i) Cant Excess  
ii) Actual cant  
iii) Equilibrium cant  
c) Write a short note on Types of Gradients. [6]

- Q5)** a) State the merits and demerits of Tunnel Boring Machines. [6]  
b) Distinguish between Natural and Artificial Harbor [6]  
c) Define the following: [6]  
i) Quay  
ii) Breakwater  
iii) Wharves

OR

- Q6)** a) What is shaft. Explain in brief necessity and merits of shafts. [6]  
b) Write a short note on Mucking. [6]  
c) Define the following: [6]  
i) Jetty  
ii) Dolphins  
iii) Buoys

## **SECTION - II**

- Q7)** a) What the various advantages of Industrialized building system. [6]  
b) Explain in brief the various types of constructions. [4]  
c) State the various qualities of Siporex Concrete. [6]

OR

- Q8)** a) Explain in brief the following: [6]  
i) Flat casting  
ii) Gang casting  
iii) Battery casting  
b) What are the various points to be considered while selection of crane for any construction work. [4]  
c) State the principle requirements of joints in any construction. [6]

- Q9)** a) State the characteristics of stationary machines and moving machines. [6]  
b) What are dumpers? State various types of dumpers. Explain any one in brief. [6]  
c) What do you mean by preventive maintenance? State the advantages of preventive maintenance. [4]

OR

- Q10)** a) What are the various points to be considered while selection of earth moving equipment for any project. [4]  
b) What is depreciation? State the various methods of depreciation. Explain any one in brief. [6]  
c) Write a short note on Dragline and its applications. [6]

- Q11)**a) What is dredging? State various dredging systems. [6]
- b) State the advantages and disadvantages of WellPoint system of dewatering. [6]
- c) Write a short note on Concrete Pumps. [6]

OR

- Q12)**a) Write a short note on Guniting and shotcreting. [6]
- b) Explain in detail Tremie Method of concreting. [6]
- c) Discuss in brief “Slip form technique” of concreting. [6]

