

Total No. of Questions :12]

SEAT No. :

[Total No. of Pages :3

**P1685**

**[5058] - 305**

**T.E. (Civil)**

**INFRASTRUCTURE ENGINEERING**

**(2012 Course) (End Semester) (Semester - I) (301002)**

*Time : 2½ Hours]*

*[Max. Marks :70*

*Instructions to the candidates:*

- 1) Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, Q9 or Q10, Q11 or Q12.*
- 2) Neat diagrams must be drawn wherever necessary.*
- 3) Figures to the right side indicate full marks.*
- 4) Assume suitable data if necessary.*

**Q1)** Compare railway transportation with Road transportation and mention characteristics of railway transportation. **[6]**

OR

**Q2)** Discuss the provision made for airports & ports with reference of 12th five year plan. **[6]**

**Q3)** Describe the functions and requirements of rail in a railway track **[8]**

OR

**Q4)** a) Define the following. **[4]**

- i) Turnout
- ii) Tongue rail
- iii) Stock rail
- iv) Switch

b) What is creep? What are its effects? **[4]**

**Q5)** Explain in brief the Vacuum Dewatering System. **[6]**

OR

**P.T.O.**

**Q6)** What is slip form shuttering? State the distinct advantages of this method over the conventional method. [6]

- Q7)** a) State the circumstances under which Tunneling operation is desirable. [6]  
b) Write short note on : Earth Pressure Balance Method. [6]  
c) State the general sequence of operation for driving tunnels through hard rock. [4]

OR

- Q8)** a) Explain in detail NATM construction technique. [6]  
b) Discuss in detail classification of tunnels based on shape. [6]  
c) Write short Note on : Pilot Tunnel. [4]

- Q9)** a) Define a port and bring out the difference between a port and harbour. [6]  
b) Define Harbour. Explain in brief classification of harbour based upon utility. [6]  
c) Define breakwater. What is the necessity of it. [4]

OR

- Q10)** a) Discuss in detail various methods of construction of breakwater. [6]  
b) Write short note on : Marin Railway. [6]  
c) Differentiate between natural and artificial harbor. [4]

- Q11)** a) Differentiate between labor & equipment oriented works. [6]  
b) What are the factors affecting for the selection of machinery for any earth work. [6]  
c) Write short note on : Preventative maintenance of equipment. [6]

OR

**Q12)a)** What are the factors to be considered for calculation of output estimation of equipment. **[6]**

b) Write short note on: **[12]**

i) Economic life of equipment

ii) Backhoe

iii) Dumpers

