

Total No. of Questions :12]

SEAT No. :

**P3559**

**[5560]-502**

[Total No. of Pages : 3

**T.E. (Civil)**

**INFRASTRUCTURE ENGINEERING AND  
CONSTRUCTION TECHNIQUE  
(2015 Course) (Semester-I) (301002)**

*Time : 2½ Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) *Answer any one from questions 1or 2, 3or 4, 5 or 6, 7 or 8, 9 or 10, 11 or 12.*
- 2) *Neat diagram must be drawn wherever necessary.*
- 3) *Figures to the right side indicate full marks.*
- 4) *Assume suitable data if necessary.*

**Q1)** Explain the silent features of smart city. **[6]**

OR

**Q2)** What is PPP? Explain with suitable examples advantages & Disadvantages of PPP Projects. **[6]**

**Q3) a)** What is Permanent Way? State the Component Parts of Permanent Way. **[4]**

b) Explain Necessity of sleepers in Railway Track. What are the requirements of good sleepers? **[4]**

OR

**Q4) a)** Describe the functions and requirements of rail in railway track. **[4]**

b) Define the following. **[4]**

i) Stock Rail

ii) Tongue Rail

iii) Switch

iv) Turnout

**Q5) a)** Explain Electro osmosis Dewatering process with the help of neat labeled sketch. **[4]**

b) What is Grouting? Explain the Grouting methods in soft soil. **[4]**

OR

**P.T.O.**

- Q6)** a) What are Diaphragm walls? Explain its Construction Methods. [4]  
b) Explain the Vacuum Dewatering system in brief. [4]

- Q7)** a) State the various methods of tunneling in soft ground. Explain Needle Beam Method with neat sketch. [6]  
b) What is Mucking? State the various method of mucking? Explain any one. [6]  
c) Write a Short Note on Micro Tunneling. [4]

OR

- Q8)** a) Give the names of types and methods of Tunnel Ventilation. Explain any one in Detail. [6]  
b) Explain the Trenchless Tunneling Technique in Detail. [6]  
c) With labeled sketch, Define the following terms. [4]  
i) Shaft ii) Addit  
iii) Portal iv) Pilot Tunnel

- Q9)** a) List out the various components of Port. Explain any two in detail. [6]  
b) Define the term Breakwater. Explain necessity in detail. [6]  
c) Write a short note on Wet Dock. [4]

OR

- Q10)** a) Discuss the site selection criteria for harbors. [6]  
b) Define the term Port. Bring out the difference between Port and Harbor in detail. [6]  
c) Define the following terms. (any four) [4]  
i) Fenders ii) Dolphin  
iii) Quay iv) Bulkhead  
v) Wharves vi) Jetty

- Q11) a)** What are the various that are considered for calculation of output estimation of equipment? Explain any two in detail. [6]
- b) What is Depreciation? Explain any one method of Depreciation. [6]
- c) Write a shot note on: Operating cost of Equipment. [4]

OR

- Q12) a)** Discuss in brief various factors affecting selection of equipment for a project. [6]
- b) Write a short note on : [6]
- i) Economic life of Equipment.
- ii) Dumpers
- c) Explain the Preventative Maintenance of Equipment. [4]

