

**B.TECH SEM – VI (2007 COURSE) (CIVIL ENGG.) :**  
**WINTER - 2017**

**SUBJECT: INFRASTRUCTURE ENGINEERING-I**

Day: **Thursday**  
Date: **23/11/2017**

**W-2017-2502**

Time: **10.00 AM TO 01.00 PM**  
Max Marks: 80

**N.B:**

- 1) **Q. No 1 and Q. No 5 are COMPULSORY.** Out of remaining questions attempt **ANY TWO** questions from each section.
- 2) Answer to both the sections should be written in the **SEPARATE** answer books.
- 3) Draw neat and labeled diagrams **WHEREVER** necessary.
- 4) Figures to the right indicate **FULL** marks.
- 5) Assume suitable data if **NECESSARY**.

**SECTION-I**

- Q.1**
- a) Enlist advantages & disadvantages of railways as compared to other modes of transport. **(05)**
  - b) Differentiate between short welded rails and long welded rails. **(05)**
  - c) Explain the concept of negative cant. **(04)**
- Q.2**
- a) What are the ideal requirements of railway track? **(05)**
  - b) What are the functions of sleepers? **(04)**
  - c) Explain the concept of over dimensioning consignment (ODC). **(04)**
- Q.3**
- a) Enlist limitations of fish plates. **(05)**
  - b) What is the necessity of elastic fastening? **(04)**
  - c) Write different plate laying methods. Explain any one. **(04)**
- Q.4**
- a) Explain following terms: (i) Cant deficiency (ii) Cant excess. **(05)**
  - b) What is buffer stops and scotch block? **(04)**
  - c) How is track quality assessment and monitoring carried out? **(04)**

**SECTION-II**

- Q.5**
- a) What are the advantages & disadvantages of tunnels as compared to open cuts? **(05)**
  - b) Enlist different methods of blasting and explain any one. **(05)**
  - c) Explain terms : ( i) Wharves (ii) Jetty **(04)**
- Q.6**
- a) What are the factors affecting selection of size and shape of tunnel? **(05)**
  - b) Write a short note on – Influence of Geological conditions on tunnel. **(04)**
  - c) Explain the term – faces of attack. **(04)**
- Q.7**
- a) What are different methods of supporting roofs and walls of tunnel? **(05)**
  - b) Enlist and explain different methods of removal of muck. **(04)**
  - c) What is the necessity of dust removal? **(04)**
- Q.8**
- a) Write a short note on: Classification of harbors. **(05)**
  - b) Explain the terms: (i) Fenders (ii) Tetra pods. **(04)**
  - c) What are the uses of wet docks and dry docks? **(04)**