Total No. of Questions :12]

SEAT No. :

P2934

[Total No. of Pages :4

[5058]-5
T.E. (Civil)
INFRASTRUCTURE ENGINEERING AND CONSTRUCTION TECHNIQUES
(2008 Course) (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) ***Answers to the two sections should be written in separate books.***
3) ***Figures to the right side indicate full marks.***
4) ***Use of logarithmic tables, slide rule, Mollier charts, electronics pocket calculator and steam table is allowed.***
5) ***Assume suitable data, if necessary.***
6) ***Neat diagrams must be drawn wherever necessary.***

SECTION-I

Q1) a) State comparison between Railways and Highways. **[1×6=6]**

b) Draw a typical cross section of a Permanent way Explain briefly the functions of various components of the Railway Track. **[2+2=4]**

c) What are the different types of railway sleepers? Explain any one in brief. **[2+4=6]**

OR

Q2) a) Define formation. What remedial measures you will suggest to prevent failure of formations. **[2+4=6]**

b) Discuss in brief Flat Footed rail and Bull headed Rail. **[2+2=4]**

c) Explain with a neat sketch Tilting of Rails and Coning of wheels. **[3+3=6]**

P.T.O.

Q3) a) Define the following terms: **[3×2=6]**

i) Ruling Gradient

ii) Pusher Gradient

iii) Momentum Gradient and

b) Define Super elevation. Derive an equation of super elevation. Also State the meaning of each term used. **[1+4+1=6]**

c) Distinguish between Directed Track Maintenance and Routine maintenance. **[2+2=4]**

OR

Q4) a) What is Super elevation why is it necessary to provide super elevation on the curves of railway Track. Also explain the concept of Negative super elevation. **[2+2+2=6]**

b) Discuss in brief the importance of Points and Crossings in railway track. **[3+3=6]**

c) Write a short note on Metro Rail and Monorail. **[2+2=4]**

Q5) a) Explain in brief classification of harbours based upon location. **[6]**

b) Describe the factors which influence the shape and size of tunnel. **[1×6=6]**

c) Classify the tunnels on the basis of their use. Explain their suitability for particular purpose. **[3+3=6]**

OR

Q6) a) What is Mucking? State the various methods of Mucking and explain any one in brief. **[1+2+3=6]**

b) What are the various points to be considered while selecting a site for Port? **[1×6=6]**

c) Write a note on Tunnel. Ventilation. **[6]**

SECTION-II

Q7) a) Explain in brief the role of construction industry in economic development of any country. **[6]**

b) What do you mean by High Rise structures? What is the construction techniques used for the construction of High Rise structures? **[2+4=6]**

c) Write a short note on quality control in construction of Prefabricated components. **[4]**

OR

Q8) a) Differentiate between labour oriented work and Equipment oriented work. **[3+3=6]**

b) Draw a neat sketch of static tower crane. **[4]**

c) Write down the advantages & disadvantages of precast construction. **[3+3=6]**

Q9) a) What do you mean by depreciation of equipment? Explain any one method in brief. **[2+4=6]**

b) Write a short note on loader dozer with suitable sketch. What are the types of blades of dozer? **[3+3=6]**

c) Explain in brief the following: **[3+3=6]**

i) Equipment working rates

ii) Record keeping

OR

Q10)a) What is work cycle? Explain the work cycle of dumper. **[2+4=6]**

b) Explain in brief the types & use of dumber. **[2+4=6]**

c) Explain in brief the following: **[3×2=6]**

i) Repair cost

ii) Economic life

iii) Labour cost

Q11)a) What is dredging? What are the different techniques used for dredging? **[2+4=6]**

b) Differentiate between Guniting and Shotcreting. **[3+3=6]**

c) Write a short note on Slip from Technology. **[4]**

OR

Q12)a) What is well point system of dewatering? Explain with suitable sketch. **[2+4=6]**

b) Explain with a neat sketch working of RMC plant. **[6]**

c) Write a short note on methods of dredging. **[4]**

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