

UNIVERSITY OF PUNE
[4363-102]
T.E.(Civil) Examination 2013
Infrastructure Engineering and construction Techniques
(2008 pattern)

Time-Three hours
[Total No. of Question=12]

Maximum Marks-100
[Total no. of printed pages= 2]

SECTION-I

- Q.1 (a) Draw a typical cross section of a permanent way and show various parts. Also state the requirements of a good track. (6)
(b) Give the classification of railway lines based on speed. (as per Indian Railway) (6)
(c) Write a short note on minimum depth of ballast cushion. (6)
- OR
- Q.2 (a) State the various zones of Indian railways. Explain in brief the organizational set up of Indian Railways. (6)
(b) Explain in brief the importance of coning of wheels and fluting of rails with the help of a neat sketch. (6)
(c) Write a note on Types of Railway sleepers. (6)
- Q.3 (a) A 5° curve diverges from a 3° main curve in a layout of B.G. Yard. If the speed on branch line is restricted to 35 kmph. Determine the restricted speed on main line. (6)
(b) Define the following terms. (5)
(i) Turnout (ii) Tongue Rail (iii) Stock Rail (iv) Crossing (v) Switch
(c) Write a short note on Track Maintenance. (5)
- OR
- Q.4 (a) Write a short note on: (16)
(1) Measured shovel packing
(2) Types of switches in points & crossing
(3) Mono rail and Metro Railway
(4) Grade compensation
- Q.5 (a) Compare the advantages and disadvantages of tunnel with open cut. (6)
(b) Explain in brief NATM method of Tunneling. (4)
(c) State the general sequence of operation for driving tunnels through Hard Rock. (6)
- OR
- Q.6 (a) Define breakwater wall. What is the necessity of it? (4)

- (b)What are the various points to be considered for selection of site for Harbour. (4)
- (c)Define Dock. Differentiate between wet dock and dry dock. (4)
- (d)Explain in brief Merits and Demerits of water transportation. (4)

SECTION-II

- Q.7 (a)Explain the construction of high rise structures considering following points. (6)
- (i)Construction Techniques
 - (ii)Safety
- (b)Explain with suitable example,the role of construction industry in economic development of a any country. (6)
- (c)Write a short note on quality control in construction of Pretabicated elements. (4)

OR

- Q.8 (a)Explain in brief Labour problems in construction sector Also state the remedial measures to prevent migration of labour from construction industry to another industry. (6)
- (b)Draw a neat labelled sketch of a Derrick crane. (4)
- (c)State the difference between equipment oriented construction and labour oriented construction. (6)
- Q.9 (a)Explain in brief the factors affecting the output of dragline. (6)
- (b)Write a note on preventive maintenance & record keeping of instruments. (6)
- (c)State the factors affecting the selection of machinery for any earth work. (4)

OR

- Q.10 (a)What is work cycle?Explain in work cycle of a Dumper. (6)
- (b)What do you mean by Depreciation of equipment. State various methods of depreciation and explain any one in brief. (6)
- (c)State the Name of equipment and its use in following construction works.:
1.Dam 2.Tunnel. (4)

- Q.11 (a)Explain in brief the Termic pipe method of underwater concreting. Also state the merits of this method over other methods. (6)
- (b)Explain in brief the following. 1.slip form pavers 2.From work for Tunnels. (6)
- (c)Draw a neat sketches of primary and secondary crushers. Also explain difference them. (6)

OR

- Q.12 Write a short notes on: (18)
- (a)Vacuum watering system
 - (b)Layout of RMC plant
 - (c)Methods of dredging