

3 Hours

80 Marks

1. Solve Any Four questions.
2. Figures to the right indicate full marks.
3. Attempt sub questions in order

- Q1** 20
- a Explain Pilot tunnel, shaft, Invert level, Heading, Drift with suitable sketch. 04
 - b Explain : Diaphragm wall construction. 04
 - c List out the materials used for facading and mention the advantages & disadvantages of facading in general. 04
 - d Explain the applications of Geotextiles & Geogrids in Construction practices. 04
 - e Draw a neat sketch showing various components of a thermal power plant. List any 3 major thermal power plants in India with their generation capacities. 04
- Q2** 20
- a Draw a neat sketch showing various parts of a TBM. Explain its working. Comment about the typical dimensions, operation cost, Owning cost, Rate of working and past examples in India where TBM is being used. 10
 - b Write a detailed note (with diagram) on New Austrian Tunneling Method covering the steps involved, Cost of working, Equipments required, Applications and practical examples where it is being used. 10
- Q3** 20
- a Explain Slip-form, jump-form and modular shuttering alongwith sketches, applications, practical examples and working process. 10
 - b Write notes on 1) FRP Concrete. 2) Self compacting Concrete 10
- Q4** 20
- a Write a note on Construction Systems for high rise structures. 10
 - b Write a note on Prefabricated construction techniques covering planning for precasting, fabrication, transport, site erection & safety measures during erection. 10
- Q5** 20
- a Explain Balanced Cantilever method of Bridge construction. 07
 - b Explain the different types of constructions to be done for underground railway. 06
 - c Explain the working mechanism of Maglev trains. 07
- Q6** 20
- a With a neat sketch/flowchart, Explain the working of (Any One) Hydro power station. OR Solar power Plant 07
 - b What are the essential components of a port ? 07
 - c Explain the procedure of erection of a electricity transmission tower. 06
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