

Time: 3-hour

Max. Marks: 80

N.B.

1. Question No. 1 is compulsory
2. Attempt any 3 Questions from the remaining.
3. All questions carry equal marks.
4. Figures in right indicate the maximum marks for those questions.
5. Assume suitable data if required and highlight the same.

- Q. 1** Attempt **any four** **20**
- a What are the different factors for the selection of construction equipment?
  - b Write a note on Light Detection and Ranging (Lidar) Technique for Railways/Highways alignments.
  - c Distinguish between conventional and modern formwork
  - d What is ground penetrating radar (GPR)? What is the use of the GPR system?
  - e Write a detailed note on the desalination process.
  - f Write briefly about the equipment required in the construction and operation of the seaport.
- Q. 2** a What is a windmill? Explain details about the installation and operation of windmills. **10**
- b What do you mean by incremental launching method? explain it with a suitable sketch. **10**
- Q. 3** a Write a detailed note on the limitations of Mivan, Doka and Modular shuttering. **10**
- b Enlist different methods of tunnelling in soft rock. State the various stages in the construction of tunnels along with the equipment required. **10**
- Q. 4** a Write a detailed note on various earthmoving, hoisting and hauling equipment. Explain their suitability and factors affecting their performance. **10**
- b Write a detailed note on equipment and techniques involved in setting up an atomic power station. **10**
- Q. 5** a Draw neat sketches of the “Jaw Crusher” and “Gyratory Crusher” and explain their work. **10**
- b Write short notes a) Equipment Suitability b) Cycle Time c) Balancing d) Ownership Cost **10**
- Q. 6** a Write a detailed note construction of the metro rail. Explain the process involved in the construction of metro railways. **10**
- b Describe in detail with a diagram about slip and jump formwork. **10**

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