

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**M. E. - SEMESTER – I • EXAMINATION – WINTER 2012**

**Subject code: 711402N****Date: 09-01-2013****Subject Name: Construction Techniques****Time: 02.30 pm – 05.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is meant by enabling structures? Discuss importance of enabling structures. Enlist enabling structures required for construction of tall structures. **07**
- (b) What is meant by automation? Discuss objectives of automation. **07**

- Q.2** (a) Enlist scaffolding for maintenance of structures. Explain with sketch scaffolding for maintenance of external surface of tall structures. **07**
- (b) What is modular co-ordination? Discuss objectives of modular co-ordination. **07**

**OR**

- (b) Discuss role of mechanization and latest technologies in construction. **07**

- Q.3** (a) Describe with sketches suitable method of timbering of trench 1.2m wide and 1.8m deep in wet soft soils. **07**
- (b) Define HDD for underground utilities. Give classification of HDD. Discuss benefits of HDD. **07**

**OR**

- Q.3** (a) Discuss advantages of trenchless technology over conventional excavation for underground utilities. **07**
- (b) Discuss briefly about (1) Dowell retrofitting (2) Ultra-Thin White Topping **07**

- Q.4** (a) Discuss various grouting materials. Enlist methods of grouting. Discuss any one method. **07**
- (b) Discuss advantages and limitations of slip form system. **07**

**OR**

- Q.4** (a) Describe with sketches construction of formwork for shell roof. **07**
- Q.4** (b) Discuss advantages and disadvantages of slurry trench method for control of ground water. **07**

- Q.5** (a) Enlist applications of nanotechnology in construction. Discuss any one application with suitable examples. **07**
- (b) Enlist types of ropes and slings used in erection operations. Discuss various types of ropes in detail. **07**

**OR**

- Q.5** (a) Explain self-compacted concrete (SCC). Discuss applications of SCC with suitable examples. **07**
- (b) Write short note on safety in erection. **07**

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