

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**
