

GUJARAT TECHNOLOGICAL UNIVERSITY**M.E Sem-I Examination January 2010****Subject code: 711402****Subject Name: Construction Techniques****Date: 22 / 01 / 2010****Time: 12.00 – 2.30 pm****Total Marks: 60****Instructions:**

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

- Q.1** (a) Discuss briefly about (1) Laser screed technology (2) Slip-form paving (3) UTW 06
(b) What is meant by enabling structure? 06
Why enabling structures are so important?
Enlist possible enabling structures for substructures of bridge for different situations.
- Q.2** (a) Describe construction & operation sequence of climbing scaffolding system with sketches. 06
(b) Enlist typical metal scaffold fittings. Sketch & state function of each fitting. 06
- OR**
- (b) Describe with sketches suitable method of timbering trench to lay sewer line at 8.0 m depth where soil strata in first 4.0 m is firm soil & in next 4.0 m wet moderately soft soil strata is found 06
- Q.3** (a) Define Horizontal directional drilling (HDD) for underground utilities. State applications of HDD. Give classification of HDD. 06
(b) Sketch typical slip-form system to construct cooling tower. 06
Label each component.
- OR**
- Q.3** (a) Enlist & explain various formwork failures. 06
(b) Describe with sketches method of thermal soil solidification. 06
- Q.4** (a) Discuss objectives of modular coordination. 06
(b) Enlist types of ropes & slings used in erection operations. 06
Explain each one in detail.
- OR**
- Q.4** (a) Discuss various safety precautions to be observed in handling of pre-cast elements. 06
(b) Describe jack-down method of well sinking. 06
- Q.5** (a) Discuss benefits of vacuum dewatering system for concrete. 06
State points to be considered while using vacuum dewatering system.
(b) Discuss rules to be followed to pump concrete successfully 06
- OR**
- Q.5** (a) Compare ready mixed concrete & site mixed concrete. 06
(b) Explain self compacted concrete (SCC). 06
State basic key properties required for SCC mix.
Explain powder type, VMA type & combined type SCC mix.
