

GUJARAT TECHNOLOGICAL UNIVERSITY
BE – SEMESTER – VI (NEW).EXAMINATION – WINTER 2016

Subject Code: 2160601

Date: 22/10/2016

Subject Name: Advanced Construction and Equipments

Time: 10:30 AM to 01:00 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)** Explain under which conditions would you prefer pile foundation? Which points you will consider while selecting the type of pile? **07**
- (b)** State factors affecting in selection of equipment in construction industry. **07**
- Q.2 (a)** Why steel formwork is preferred? Explain with neat sketches, the formwork for R.C.C. Beam **07**
- (b)** What is meant by Demolition? What are the factors affecting the evaluation of demolition methods? **07**
- OR**
- (b)** Write short note on “Methods of construction of Tall Structures” **07**
- Q.3 (a)** What are the factors to be considered, while making choice between coffer dam and caisson? **07**
- (b)** Describe pile driving by drop hammer method. State and explain dynamic formula for determining load carrying capacity of piles. **07**
- OR**
- Q.3 (a)** Explain with neat sketch Cement grouting process to control the ground water in construction. **07**
- (b)** Sketch typical well caisson. Discuss function of each element of well caisson. **07**
- Q.4 (a)** Explain in detail various financial aspects of procuring construction equipment. **07**
- (b)** Discuss Rimpull and Drawbar pull in detail. **07**
- OR**
- Q.4 (a)** How would you determine economic life of construction equipment? **07**
- (b)** Estimate book value of equipment using sinking fund method at the end of each year for following data. **07**
- Initial cost of equipment : 5000000
 - Life of equipment : 7 years
 - Salvage value : 8% of initial cost of an equipment
 - Rate of Interest = 14%
- Q.5 (a)** Enlist excavating equipment. Draw a neat sketch and explain working of any two excavating equipment. **07**
- (b)** Write short note on (i) Crawler Tractor (ii) Wheel tractor **07**
- OR**
- Q.5 (a)** Enlist the different hoisting equipment. Draw a neat sketch and explain working of any three excavating equipment. **07**
- (b)** Define : (i) Shrinkage (ii) Consolidation (iii) Settlement (iv) Internal friction (v) Elasticity (vi) Swell (vii) Permeability **07**
