

**B.Tech. Civil (Construction Management) /
B.Tech. Civil (Water Resources Engineering)**

Term-End Examination

00126

June, 2014

**ET-581(F) : MECHANICAL EQUIPMENT IN
CONSTRUCTION**

Time : 3 hours

Maximum Marks : 70

Note : *Attempt any seven questions. All questions carry equal marks. Use of calculator is allowed.*

1. (a) Explain what is understand by the terms, "Swell" and "Shrinkage". Why does soil swell or shrink ? 5
- (b) What is meant by "drawbar pull" and "rimpull" ? How do they differ from each other ? 5
2. How do Draglines operate ? How are these classified ? Discuss the merits and demerits of each. 10
3. With the help of sketches explain the following : 10
 - (a) Derrick crane
 - (b) Fork lift truck

4. (a) How are dumpers different from trucks ? 3
 (b) What are the uses of belt conveyors ? What are the essential parts of a belt conveyor system ? Give sketches. List out the merits of conveyor belt system. 7
5. What types of compactors are recommended for different soils ? How does a sheep's foot roller compact the earth ? Discuss its merits and demerits. 10
6. Describe various types of cableways. What are its various components ? How does a cableway operate ? Give its main uses. 10
7. Classify concrete vibrators and explain the structure and working of Needle and Form type vibrators. 10
8. What is a Drilling Jumbo ? Where do you use them ? Explain any one Drilling Jumbo with a sketch. 10
9. Describe Needle valve with a neat sketch. How does it operate in controlling the flow of water ? 10
10. Write short notes on any **four** (giving sketches) : $4 \times 2 \frac{1}{2}$
- (a) Flap Gate
 - (b) Impact Rollers
 - (c) Sinking Fund method of Depreciation
 - (d) Angle of Swing in a Power Shovel
 - (e) Scrapers
 - (f) Escalators