

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

**Term-End Examination**

**June, 2013**

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

*Time : 3 Hours*

*Maximum Marks : 70*

*Note : Answer any seven question all carry equal marks. The answers shall be in your own language.*

1. (a) What are the components of cycle time of a machine ? 5+5
- (b) A construction machine costs Rs. 11,20,000/- and has an expected life of 5 years and salvage value of Rs. 2,00,000/-. It is expected to work 2000 hours in a year. Compute the yearly depreciation for the machine using
  - (i) Sum-of the year's digits and
  - (ii) Sinking fund methods.
2. (a) Explain the operations of a power shovel. 5+5
- (b) What are the different types of dredges and how does each function ?

3. How are cages lifted in an elevator? What safety devices are used on elevators and how do they function? 10
4. (a) How are dumpers different from trucks ? 5+5  
How can you select a truck for a particular earth work job ?  
(b) What are tipping wagons and their various uses ?
5. (a) How and where manually operated vibrator plate compactors are used ? 5+5  
(b) Explain the working of a tamping foot/pad foot roller.
6. Describe the various types of cable ways. How does it operate ? How do you determine its capacity ? 10
7. (a) What are the merits of straddle type drilling jumbo ? 5+5  
(b) What are different types of cuts in underground excavation ?
8. (a) Sketch and explain surface vibrators. 7+3  
(b) Where form vibrators are commonly used ?

9. (a) How is a sliding gate operated ? 5+5  
(b) What are flap gates ? Explain.
10. Write short notes on *any two* of the followings : 10  
(a) Jack hammers  
(b) Batchers  
(c) Rim pull.
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