

**B.Tech. Civil (Construction Management)**

**Term-End Examination**

**June, 2010**

00765

**ET-523 (Part B) : Operation and  
Maintenance of Construction Equipment**

*Time : 3 hours*

*Maximum Marks : 70*

*Note : Attempt any seven questions . Use of calculator is allowed.*

1. (a) Describe the role of planning in selection of equipment and working shifts for a construction project. 5+5  
(b) What are the advantages and disadvantages of purchasing an equipment as compared to renting it ?
2. (a) Why do you carry out cash flow analysis for equipment ? 5+5  
(b) How will you ensure safety on a construction job ?
3. (a) Draw an organisation chart for centralised maintenance. Describe the objectives of an organisation chart for equipment management. 5+5  
(b) What role do operating conditions play on machine productivity ?

4. (a) What are the objectives of planning a budget and budgetary control ? 5+5  
(b) What is meant by transit insurance ? How is construction equipment insured ?
5. (a) What are the objectives of carrying out inspections ? Name the four major types of inspection. 5+5  
(b) What is preventive maintenance and what are its principle objectives ?
6. (a) What is a centrifugal pump ? How does a reciprocating pump lift water ? 5+5  
(b) A pump operating at a rate of 3600 rpm requires 90 kW power to discharge 120 lts/sec against a head of 75 m. Find its capacity, head and power required at 2100 rpm.
7. (a) Why is a cooling system required on an IC engine ? Explain. 5+5  
(b) What is an axial compressor ? Explain the working of a centrifugal compressor.
8. (a) How are compressed air services planned for a construction project ? 5+5  
(b) Where vibratory pile driver is preferred ? What are the advantages of a vibratory pile driver ?
9. (a) What are the guidelines for aligning haul roads and how will you plan the access roads in a project area ? 5+5  
(b) What records for individual machines should be maintained by the Project Manager ?

10. Write short notes on *any five* of the following : **5x2=10**

- (a) Errection charges
  - (b) Depreciation
  - (c) Supercharging
  - (d) Type of lubricants
  - (e) Petrol Engines
  - (f) Training of operators
  - (g) Safety at construction site
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