

B.Tech. Civil (Construction Management)**Term-End Examination****December, 2015****ET-523(B) : OPERATION AND MAINTENANCE OF
CONSTRUCTION EQUIPMENT***Time : 3 hours**Maximum Marks : 70*

Note : Answer any **seven** questions. All questions carry equal marks.

1. What are the general considerations of selection of a construction equipment ? Discuss the advantages of selecting a standard equipment. 10
2. Give an account of the different ways of financing a construction equipment. 10
3. (a) "Right operating personnel are needed to operate any construction equipment." Explain how would you fulfil the truth of the above statement in a large construction site.
(b) What are the different types of lubricants ? How does circulating oil differ from gear oil ? What are the characteristics of wire rope lubricant ? 5+5=10

4. What is scheduling ? What items of a big construction site are required to be scheduled ? Briefly describe the ways of scheduling these items. 10
5. What is meant by spare parts inventory ? How would you plan for repair and maintenance of a construction equipment ? 10
6. What are the objectives of inspection ? Discuss the four major types of inspection. 10
7. What is a Log Book ? What information are recorded in a log book ? How does a log book help in satisfactory maintenance of a construction equipment ? 10
8. (a) Define specific speed of a pump. State how the following parameters of a pump are related to each other :
- (i) Discharge (Q) vs Speed (S)
 - (ii) Head (H) vs Speed (S)
 - (iii) Power (P) vs Speed (S)
- (b) A centrifugal pump operating at 1450 rpm consumes 45 kW of power to discharge 60 litres per sec. of water against a head of 60 m. Find the discharge (Q), head (H) and power consumption (P), if the same pump is operated at 1750 rpm. 5+5=10

9. Give a neat sketch showing the assembly of a drop hammer showing the frame of rig, pile, gear with drum and power unit used for a piling work. Derive an expression of efficiency of blow for a drop hammer type pile driving. Discuss how the efficiency of blow is influenced by the weight of pile and that of hammer head. 10
10. Give a neat sketch showing the Fuel system of a diesel engine. Explain the principles of working of Pressure-Time Fuel injection scheme of a diesel engine. 10
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