

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

**Term-End Examination**

00650

**June, 2015**

**ET-523(B) : OPERATION AND MAINTENANCE OF  
CONSTRUCTION EQUIPMENT**

*Time : 3 hours*

*Maximum Marks : 70*

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

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1. What are the items to be taken into account for determining hire charges of a construction equipment ? How will you account for idle hours ownership cost ? 10
  
2. "Continuous analysis and review of cash to asset and back to cash is an indication of growth of a construction project." Discuss the above statement. 10
  
3. Distinguish between License and Permit. Why does a contractor need to obtain license ? Who gives licenses to tradesmen ? Who arranges permit to carry out a project construction work ? How is a project in an urban area different from one in a rural area with regards to obtaining permit ? 10

4. A construction equipment is procured from Germany at an F.O.B. price of Euro € 7000/- (1 € = Indian ₹ 73). Marine freight of the equipment is 1% of F.O.B. price. Customs Duty is 15% of the landed cost of the equipment at the port of entry. The unloading charge is  $\frac{1}{4}\%$  of the landed cost at the port of entry. Cost of inland transportation is  $\frac{1}{2}\%$  of the cost of the equipment at the port of entry. The combined insurance cost for transportation and erection is 0.8% of the landed cost of the equipment at the port of entry. The erection and commissioning is  $2\frac{1}{2}\%$  of the landed cost of the equipment at site. Calculate the procurement cost of the equipment. 10
5. Describe briefly the methods of planning the access road of water supply and power for a big rural construction site. 10
6. What information pertaining to individual machines should be kept with the project manager ? Explain how management decisions pertaining to repair and maintenance of construction equipment become easy from project manager's records. 10

7. Explain Preventive Maintenance. What are its main objectives ? How would you plan it ? What are the essential inputs of a successful preventive maintenance ? 10
  
  8. Describe briefly the working principles of a Borehole pump. For handling erosive fly ash laden water, what modifications are made in a normal Borehole pump ? 10
  
  9. What are the major equipments required for a pile driving work ? What type of piling rig will you recommend for driving large number of piles over a small area ? What are the advantages and disadvantages of the type of rig recommended by you ? 10
  
  10. What is meant by supercharging of a diesel engine ? How does a supercharger work ? Where and why is a supercharger necessary ? 10
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