

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

**Term-End Examination**

**June, 2016**

00698

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

*Time : 3 hours*

*Maximum Marks : 70*

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

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1. (a) Describe the importance of construction contracts for the successful completion of civil engineering projects.
- (b) Discuss the importance of construction planning. 5+5
2. (a) List the documents included in a construction contract.
- (b) Describe the main features of the arbitration clause in a construction contract. 5+5

3. (a) State the purposes of scheduling in a construction project.
- (b) Discuss the effects of proper planning and selection of construction equipment upon ultimate cost of a construction project. 5+5
4. (a) Explain the causes of accidents at a construction site.
- (b) Describe in brief the precautionary measures required to be adopted in hot bituminous work. 5+5
5. (a) Enumerate the importance of construction management in national development.
- (b) State the need for inspection and quality control in construction works. 5+5
6. (a) Define Preventive Maintenance. What are the different systems for maintenance applicable on large mechanized construction projects ?
- (b) What maintenance action would you recommend for the following items ?
- (i) Tyres and tubes
- (ii) Steels wire ropes 5+5

7. (a) Given that  $W_H = 4t$ ,  $W_P = 8t$ ,  
height of drop = 4 m and number of blows is  
20 per minute. Determine the efficiency of  
the blow, if the materials are inelastic.  
Here,  
 $W_H$  = Weight of the hammer head  
 $W_P$  = Weight of the pile.
- (b) Explain the advantages and disadvantages  
of a diesel hammer. 5+5
8. (a) Classify water pumps and distinguish  
between different types of pumps. What  
considerations affect pump selection for a  
construction job ?
- (b) Explain in brief the priming system of a  
centrifugal pump. 5+5
9. (a) What are the different fuels used in  
I.C. engines ? Explain in brief the  
combustion system in IC engines.
- (b) What do you understand by turbocharging or  
supercharging ? Explain the above with a  
neat sketch. 5+5

10. (a) What are the advantages and disadvantages of purchase of a construction equipment as compared with renting the same ?

(b) Describe the working of a double acting reciprocating pump. Also explain the advantages and disadvantages of reciprocating pumps.

5+5