

B.Tech. Civil (Construction Management)**Term-End Examination****June, 2008****ET-523 (Part B) : Operation and
Maintenance of Construction Equipment***Time : 3 hours**Maximum Marks : 70***Note :** *Attempt any seven questions.*

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1. (a) Discuss the merits and demerits of purchasing over hiring of a construction equipment.
 - (b) Describe various costs considered while fixing the hire charges of equipment. 5+5

 2. (a) Discuss the insurance policies applicable to working and idle equipment.
 - (b) Compute the efficiency of the drop hammer for the following data :
Weight of the hammer head $W_H = 5$ t
Weight of the pile $W_p = 8$ t
Number of blows = 15 per minute 5+5

3. (a) Why is the output during night shifts less than that during the day ?
(b) How are the energy charges computed for equipment working on electricity ? 5+5
4. (a) What is Downtime ? How is it computed ? How is it controlled ?
(b) What are the advantages of compressed air as a prime mover ? 5+5
5. (a) What is Preventive Maintenance (PM) ? What are its objectives ? How will you plan for PM ?
(b) Explain the effects if the equipment is worked beyond its economic life. 5+5
6. (a) What is a unit log book ? What information does it provide ?
(b) Distinguish between the characteristics of reciprocating and centrifugal pumps. 5+5
7. A centrifugal pump operating at 1500 rpm, requires 60 kW to discharge 80 litres/sec against a head of 60 m. Compute its capacity, head and power required at 1800 rpm. 10
8. (a) What is turbo charging ? Where and why is it necessary ?
(b) How are compressors classified ? Explain the working of a centrifugal compressor. 5+5

9. (a) Explain a grout agitator with a neat sketch.
- (b) What is a drop hammer for pile driving ? Discuss its advantages and disadvantages. 5+5
10. Write short notes on any **five** of the following : 5x2
- (a) License and Permits
 - (b) Erection, dismantling and shifting
 - (c) Standby equipment
 - (d) Routine maintenance
 - (e) Drainage pump
 - (f) Priming
 - (g) Multi stage blower

