

B.E CIVIL VIII Const. Engrg

(Revised Course)

QP Code : 15742

(3 Hours)

Total Marks: 100

N.B 1) Question No.1 is compulsory.

2) Answer any four out of remaining six questions.

3) Figures to the right indicate full mark.

4) Assume suitable data, if reqd.

Q.1 a) Explain the necessity & advantages & the use of machinery in construction projects. ---08M.

b) Determine hourly owning & operating cost of a vibratory roller for following data. ---12M.

Purchase cost =Rs.20 Lakhs.

Investment cost=15% of avg.investment

Useful life=10 yrs.

Use /year=3000 hrs./year

Major repairs=same as depreciation

Salvage value=Rs.2 Lakhs

Engine H.P=25 (diesel)

Operating factor=0.8

Operators salary=Rs.10, 000/month

Cost of Lubricants=25% of fuel cost.

Q.2 a) List various types & excavating equipments. Explain any one of them in detail. ---08 M.

b) Draw sketches of: 1) Sand drain 2) Stone column 3) Drilling pattern. ----12M.

Q.3 a) A shovel is down for 5%, 8%, 12% &15% of the time respectively in the first four years of use. The avg.productivity factor is 0.8. The shovel works for 2500 hrs. in a year.

The operating cost is Rs.1200/hour.

Workout:- 1) Downtime cost 2) Cumulative downtime cost 3) Cumulative cost/hour. ----10M.

b) Explain: 1) Hot weather concreting 2) Cold weather concreting. ----10M.

Q.4 a) List out the methods of tunnelling in hard rock. Explain any one method clearly. ----08M.

b) Explain: 1) Tunnel Boring m/c. 2) Pilot Tunnel 3) Tower Crane. ----12M.

Q.5 a) what is lining of a tunnel? Explain the methods of Lining. ----10M.

b) What is mass concrete? What precautions will you take while mass concreting? ----10M.

Q.6 a) Explain: 1) Grouting & its applications 2) Vacuum Concrete

b) Explain the method of construction of concrete diaphragm wall.

Q.7 Write notes on following (any five )

a) Double acting hammer b) Slip formwork c) Liner plate method d) Scrapper

e) Standard equipments & Special equipments. f) Tremie Method. ---- 20M.

**LM-Con. 8096-14.**