

(Time: 3 Hours)

[Total marks : 80]

NOTE:.

- Question No. 1 is compulsory.
- Attempt any three out of the remaining five questions.
- Figure to the right indicates full marks
- Assume any suitable data and clearly state the same.

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- Q.1 A) Discuss the role of construction equipment in speedy and economical completion of large construction projects. 10
 B) Write a short note on shaft in tunnel. 10
 C) Define and differentiate Standard equipment and Special equipment.
 D) Write a short note on grouting.
- Q.2 A) Determine owning and operating cost per hour for an excavator from the following data: 10
 Purchased cost = Rs.40 lacs
 Useful life = 15 years (2000 hours/year)
 Engine capacity = 90 HP
 Salvage value = 10% of purchase cost
 Investment cost = 12% average annual investment
 Lubrication cost = 20% of fuel cost
- B) Discuss various types of Hauling equipments with their suitability 10
- Q.3 A) What are the different types of crushers used for production of aggregate? Describe Cone crusher with neat sketch stating components and its working. 10
 B) Explain with neat sketch the drag line in respect of its working, suitability and factors affecting the performance. 10
- Q.4 A) Discuss RCC diaphragm wall with its suitability? Explain the method of construction of RCC Diaphragm wall. 10
 B) Enlist the different methods of tunneling in Soft soil. Explain any one method in detail. Suggest the various equipments required with their purpose. 10
- Q.5 A) Explain with neat sketches the working of single acting hammer and double acting hammer. 10
 B) What is mass concrete? What are the effects of mass concreting during and after placing? What precaution will you take for mass concreting? Explain. 10
- Q.6 Write short notes on any four 20
 i- Slip form work
 ii- Stone column
 iii- Vacuum concrete
 iv- Shotcreting
 v- Cladding types
 vi- Bulldozer
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