

( 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.

- Q.1** Attempt any four and answer briefly. **(20)**
- a Explain the factors affecting the performance of stone crusher (05M)
- b Explain New Austrian tunneling Methods (NATM) with a brief line sketch (05M)
- c Explain with a brief line sketch the parts of Tower crane and its uses (05M)
- d Enlist and explain any two method of construction of flyovers (05M)
- e Explain with a neat sketch the working of any one earth moving equipment. (05M)
- Q.2** **(20)**
- a Draw and label accurately the neat diagram of TBM. Also explain the working feature of TBM. (10M)
- b Explain with a neat sketch the parts and working vertical shaft sinking machine. (06M)
- c Explain the working of Tunnel lining trolley (04M)
- Q.3** **(20)**
- a Explain slip form-work system with neat labeled diagram. Write the application, advantage and disadvantage of slip form-work system. (10)
- b Explain construction of road using paver machines with the help of brief line sketches (10)
- Q.4** **(20)**
- a Explain in detail the construction of railway line using track laying machine and also enlist the ancillary equipment required for the construction of railway line. (10)
- b Draw the layout of hydropower station. Also enlist and explain the equipment required for the construction of Hydropower station. (10)
- Q.5** **(20)**
- a Explain the equipment's required for construction and operation of an airport. (10)
- b Enlist the methods of bridge construction and explain the incremental launching methods for the construction of bridges (10)
- Q.6** **(20)**
- a Enlist all pile driving equipment and explain diesel pile hammer. (05)
- b Explain in brief the installation and operation of windmill (05)
- c Explain the basic technology behind maglev trains (05)
- d Explain the basic technology of ground penetrating radar for location of underground utilities. (05)

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