

CBCS SCHEME

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15MN661

Sixth Semester B.E. Degree Examination, June/July 2018 Tunneling Engineering

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing one full question from each module.

Module-1

1 Explain in detail the parameters influencing location, shape, size and geological aspects for driving tunnels. (16 Marks)

OR

2 What are the uses of tunnels in mining and other projects? Explain each in detail, with suitable examples and figures. (16 Marks)

Module-2

3 What are the factors affecting choice of excavation techniques or the method? Explain each in detail, with suitable examples. (16 Marks)

OR

4 What is jacked box excavation technique? Explain the method in detail with suitable diagrams. What are its applicability and limitations? (16 Marks)

Module-3

5 What are the factors affecting drillability? Explain each in detail, with suitable figures. (16 Marks)

OR

6 What are the types of cuts commonly used in tunneling? Explain the wedge cut in detail, with suitable diagram. (16 Marks)

Module-4

7 A tunnel with a cross sectional areas of 8m (wide) × 6m (high) and 50m long has to be driven in hard rock for a metro railway project with Tunnel Boring Machine (TBM). Explain the sequence of operations of be carried out, with relevant figures. (16 Marks)

OR

8 Discuss on :
a. Tunneling by road headers (08 Marks)
b. Selection and performance of impact hammers. (08 Marks)

Module-5

9 What are the factors to be considered while designing supports for a tunnel? Explain each in detail, with suitable example. (16 Marks)

OR

10 Explain how the ventilation is provided while driving a tunnel of 1000m long, with suitable figures. What are the precautions to be taken during such operation? (16 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.