CBCS SCHEME

USN | | | | | | | | | | |

18MN35

Third Semester B.E. Degree Examination, July/August 2022
Drilling and Blasting

Time: 3 hrs. Max. Marks: 100

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

Module-1

1 a. Explain anger drill with neat sketch. **(10 Marks)**
b. Explain cable–tool drill with neat sketch. **(10 Marks)**

OR

2 a. Explain the process of boring for exploration. **(10 Marks)**
b. Explain the process of storage of drill cores and interpret the bore data. **(10 Marks)**

Module-2

3 a. Explain the types of drilling operation used in rock breakage. **(10 Marks)**
b. Explain the fundamentals of percussive drilling with neat sketch. **(10 Marks)**

OR

4 a. Explain the fundamentals of rotary percussive drilling with neat sketch. **(10 Marks)**
b. Explain the fundamentals of rotary drilling with neat sketch. **(10 Marks)**

Module-3

5 a. Explain the process of storage of explosives in small quantities, large quantities and portable magazines. **(10 Marks)**
b. Explain the characteristics important for the selection of explosives. **(10 Marks)**

OR

6 a. Explain shock phase. Gas phase and burden movement phase of rock-explosive interaction. **(10 Marks)**
b. Write short notes on : i) Nitroglycerine ii) Ammonium nitrate. **(10 Marks)**

Module-4

7 a. Why is secondary blasting practiced? Discuss the following :
i) Pop shooting ii) Plaster shooting. **(10 Marks)**
b. Enumerate the factors which govern the optimum blast designing in the surface mines. **(10 Marks)**

OR

8 a. Explain the mechanism of rock fragmentation by blasting including the thermodynamic aspect. **(10 Marks)**
b. write short notes on : i) Livingstone crater theory ii) C – J plane iii) Decoupling iv) Shaped charge. **(10 Marks)**

Module-5

9 a. What is meant by permitted explosives? Categories the permitted explosive with example. **(10 Marks)**
b. With the help of neat sketch show the preparation of a primer cartridge, direct initiation and inverse initiation. **(10 Marks)**

OR

10 a. Discuss the factors which govern the drilling and blasting pattern in coal. **(10 Marks)**
b. With the help of neat sketch, discuss elaborately about the blasting of ring holes in blasting gallery method. **(10 Marks)**

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