

USN

--	--	--	--	--	--	--	--	--	--

10MN63

Sixth Semester B.E. Degree Examination, Dec.2018/Jan.2019
Underground Metal Mining

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting atleast TWO questions from each part.

PART – A

- 1 a. Explain in detail the peculiarities of metaliferous deposits. (10 Marks)
b. Explain the scope and limitations of underground metal mining. (10 Marks)
- 2 a. During exploration it was found that 4.5 mts thick reef and dipping at an angle of 72° . Explain with neat sketch the method of developments to reach the ore body. (10 Marks)
b. Explain the factors that are to be considered while selecting the level interval and the shape and size of the drive. (10 Marks)
- 3 a. Explain the factors affecting the choice of stoping methods. (10 Marks)
b. Give the classification of the stoping methods. (05 Marks)
c. Explain the Physico – Mechanical characteristics of ore. (05 Marks)
- 4 a. The following are the ore body features found during exploration : (10 Marks)
i) Dip of ore reef is 26° ii) Thickness of the reef is less then 4.5 mts iii) Low ore grade iv) The ore body and the strata is strong enough.
Design the method of extraction which is suitable for above conditions with a neat sketch.
b. Explain with a neat sketches the sub – leveling caving method with their advantages and disadvantages. (10 Marks)

PART – B

- 5 a. Explain in detail the long hole stoping method, with their advantages and disadvantages. (10 Marks)
b. Explain hydraulic mining with neat sketches, with their advantages and disadvantages. (10 Marks)
- 6 a. Explain in detail the extraction of remnant pillars, with a neat sketch. (10 Marks)
b. What are precautions to be taken during extraction of shaft pillars and remnant pillars? (10 Marks)
- 7 a. What are the problems faced during extraction of ore in deep mining? (10 Marks)
b. Mention the methods of extraction in deep mining and explain any one with neat sketch. (10 Marks)
- 8 a. Explain Tunnel boring machine, with there applications and limitations, with neat sketch. (10 Marks)
b. Write short notes on :
i) Difference between the shaft boring machine and tunnel boring machine.
ii) Applications of shaft boring machine. (10 Marks)

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.