

CBCS SCHEME

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18MN42

Fourth Semester B.E. Degree Examination, Jan./Feb. 2021 Underground Metal Mining

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Explain present status of Indian metal mining industry in brief. (05 Marks)
- b. Explain peculiarities of metalliferous deposits. (05 Marks)
- c. List out the Scope and limitations of underground metal mining. (10 Marks)

OR

- 2 a. List and explain the factors to be considered for choice of level interval. (10 Marks)
- b. Explain arrangements for dumping into main ore pass with a neat labeled sketch. (10 Marks)

Module-2

- 3 a. With neat labeled sketches explain modern method of raising methods such as
i) Alinak Raising method. ii) Jora-lift raising method. (10 Marks)
- b. With a neat labeled sketch explain Raise boring and long-hole method of raising in an underground metal mine. (10 Marks)

OR

- 4 a. Explain the factors which affect the choice of stoping method. (05 Marks)
- b. With the help of flow chart explain classification of stoping method. (05 Marks)
- c. Explain Physico-mechanical properties of ore and wall rock. (10 Marks)

Module-3

- 5 a. With a neat labeled sketch, explain cut and fill method of stoping with their application, limitation, working principle, merits and demerits. (10 Marks)
- b. With a neat labeled sketch explain Shrinkage Stopping with their application, limitation, working method, merits and demerits. (10 Marks)

OR

- 6 a. With a neat labeled sketch, explain Sub-level Stopping with their application, limitation, working principle, merits and demerits. (10 Marks)
- b. With a neat labeled sketch explain Square-Set Stopping with their application, limitation, working principle, merits and demerits. (10 Marks)

Module-4

- 7 a. Explain top slicing method of caving with a neat labeled sketch. (10 Marks)
- b. Explain Sub-level caving with their applicability, advantages and disadvantages. (10 Marks)

OR

- 8 a. Explain block caving with their applicability, advantages and disadvantages. (10 Marks)
- b. List and explain innovative Support and reinforcement systems for hard rock mines. (10 Marks)

Module-5

- 9 a. With a neat labeled sketch, explain solution mining also list its applicability merits and demerits. (10 Marks)
b. With a neat labeled sketch, explain bore hole mining also list its applicability merits and demerits. (10 Marks)

OR

- 10 a. List and explain problems of deep mining and also suggest their remedial measures. (10 Marks)
b. Write a note on the following.
i) Pillar recover Dilation. ii) Loss and recovery in stoping. (10 Marks)

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VTU EXAMS JAN / FEB 2021