

CBCS SCHEME

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18MN32

Third Semester B.E. Degree Examination, Dec.2019/Jan.2020 Elements of Mining Engineering

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. What are the geo-technical investigations to be carried out during prospecting and exploration stage? (10 Marks)
b. Explain the factors that govern the selection of mining methods. (10 Marks)

OR

- 2 a. List the classification of mining methods and their selection criteria. (10 Marks)
b. Define the Mining Terminology. i) Vein ii) Vertical shaft iii) Decline iv) Run off mine v) Stripping ratio. (10 Marks)

Module-2

- 3 a. Explain the need for widening and deepening of shaft in an underground mine. (10 Marks)
b. If there is a water logging strata in superjacent ground during sinking, which method of shaft sinking to be adopted. Explain the same with neat sketch. (10 Marks)

OR

- 4 a. Explain the unit operations during sinking a shaft. (10 Marks)
b. If there is a loose sand in superjacent ground during sinking. Explain the method of sinking to be adopted with neat sketch. (10 Marks)

Module-3

- 5 a. Consider a drive of 3m high and 3m wide with a length of 100m. Assume the man power required for mechanized method of driving a drift and calculating the OMS for the same. (Specific gravity of rock is 3) (10 Marks)
b. Explain the unit operation to be adopted in driving a drift by conventional method. (10 Marks)

OR

- 6 a. Consider a drive of 3m high and 3m wide with a length of 100m. Assume man power required for conventional method of driving a drift and calculating the OMS for the same (Specific gravity of rock is 2.5). (10 Marks)
b. Explain and draw burn cut pattern of blasting with sequence of detonation. (10 Marks)

Module-4

- 7 a. List the salient features of systematic support rules. (10 Marks)
b. Enumerate the differences of yield and rigid supports with neat sketch. (10 Marks)

OR

- 8 a. Explain prop and cog support use of in a drive. (10 Marks)
b. Explain hydraulic and steel support used in mine. (10 Marks)

Module-5

- 9 a. What are the different types of drill patterns used in tunneling? Explain. (10 Marks)
b. Explain the construction and working principle of earth pressure shield method. (10 Marks)

OR

- 10 Explain the excavation cycle in conventional method (Drill and Blast) of Tunneling. (20 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.