



C20-MNG-105

7055

**BOARD DIPLOMA EXAMINATION, (C-20)
OCTOBER/NOVEMBER—2023
DMNG – FIRST YEAR EXAMINATION
ELEMENTS OF MINING**

Time : 3 Hours]

[Total Marks : 80

PART—A

3×10=30

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. Define the terms (a) mining and (b) shaft.
2. List the various pre-mining operations.
3. Define the terms (a) face and (b) auxiliary shaft.
4. List the drilling tools and accessories used in percussive drilling.
5. Define the terms (a) explosive and (b) booster.
6. List any three characteristics of explosives.
7. Define the terms (a) blown-out shot and (b) powder factor.
8. Define solid blasting and state field of application.
9. List any three factors to be considered for the selection of a shaft as a mode of entry.
10. List the modern techniques used in shaft sinking.

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **eight** marks.
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. (a) Write the classification of coal seams based on their thickness, depth, inclination and gassiness.

(OR)

(b) Compare shaft vs incline.

12. (a) Explain the principle of working of single tube core barrel with a sketch.

(OR)

(b) Explain method of rotary drilling with a sketch.

13. (a) Describe the constructional details of delay detonator with sketch and list the field applications.

(OR)

(b) Describe the safety fuse and mention the field application of safety fuse.

14. (a) Explain pyramid cut blasting pattern with a neat sketch.

(OR)

(b) List precautions to be taken before and after blasting.

15. (a) Explain the different stages of shaft sinking through normal strata.

(OR)

(b) Explain temporary supporting while sinking shaft.

PART—C

10×1=10

- Instructions :** (1) Answer the following question.
(2) The question carries **ten** marks.
(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 16.** The management of the mine was proposed to carry out the mining operations by sinking shaft. The location of mine site is associated with heavy water. Which method of shaft sinking should be used? Explain with sketch.

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