

22380

22223

3 Hours / 70 Marks

Seat No. 

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- Instructions* –
- (1) All Questions are *Compulsory*.
  - (2) Answer each next main Question on a new page.
  - (3) Illustrate your answers with neat sketches wherever necessary.
  - (4) Figures to the right indicate full marks.
  - (5) Assume suitable data, if necessary.
  - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
  - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

1. **Attempt any FIVE of the following:** **10**
- a) Define ‘Burden and spacing’.
  - b) Define Reclamation of Land.
  - c) Define bench slope failure.
  - d) Define crest and toe of bench.
  - e) Enlist various mine entries.
  - f) Define side casting and over casting
  - g) Explain conditions under which back Hoe is used in opencast mine.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) Explain causes and prevention of bench slope failure.
  - b) Describe the factors affecting the choice of surface miner.
  - c) Describe 'LOX' explosives. Its properties and use.
  - d) Explain the term 'Bulk Explosives' and precautions to be taken while its transportation.
- 3. Attempt any THREE of the following:** **12**
- a) Explain the working / operation of Rotary Drilling.
  - b) Describe shovel-dumper combination of transportation.
  - c) Define and sketch the parameter for blast hole design.
  - d) Describe the types of secondary blasting with diagrams.
  - e) Explain the 'MONEL' system of blasting.
- 4. Attempt any THREE of the following:** **12**
- a) Justify the term 'Ground vibration, its causes and prevention.'
  - b) Describe the operation of scraper with neat sketch.
  - c) Explain the various blasting techniques used in open-cast mining.
  - d) Describe the classification of 'Surface Mining'.
- 5. Attempt any TWO of the following:** **12**
- a) Explain the operation and operating parameters of 'Drugline' with neat sketch.
  - b) Describe ANFO and slurry explosives.
  - c) Explain the various types of shovel with neat sketch.
- 6. Attempt any TWO of the following:** **12**
- a) Explain the working of bucket wheel excavator with neat sketch.
  - b) Describe the classification of surface mine machinery.
  - c) Justify the advantages of open cast mining over underground mining.
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