

# 22109

**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. Define any FIVE of the following terms: **10****
- a) Development and Depillaring
  - b) Hanging Wall and Footwall
  - c) Stripping Ratio
  - d) Explosive
  - e) Stope
  - f) Cross bar
  - g) Intake and Return air

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) Explain the uses of coal and manganese mineral.
  - b) Describe the functions of DGMS in Indian mining industry.
  - c) Compare bord and pillar method with longwall method of working.
  - d) Illustrate with figure. Level interval, Raise and winze.
- 3. Attempt any THREE of the following:** **12**
- a) Compare surface mining Vs underground mining method.
  - b) Classify the different types of drilling based on their principle of action.
  - c) How will you charge a shothole with direct initiation method of charging?
  - d) Illustrate with neat sketch direct rope haulage.
- 4. Attempt any THREE of the following:** **12**
- a) Illustrate with a neat sketch shaft and adit.
  - b) Illustrate the following terms:
    - i) Mineral
    - ii) Gangue
    - iii) Country Rock
    - iv) Outcrop
  - c) Describe the applicability conditions and advantages of surface mining method.
  - d) Illustrate series and parallel connections of shotfiring in underground coal mining.
  - e) Enlist various ventilation devices. Illustrate air crossing.

**5. Attempt any TWO of the following:****12**

- a) Explain the role and functions of IBM in Indian mining industry.
- b) Compare longwall retreating method of mining with longwall advancing method.
- c) Describe ore chute, grizzly, finger raise w.r.t. underground ore transportation.

**6. Attempt any TWO of the following:****12**

- a) Illustrate the various elements of benches in surface mining method.
  - b) Describe the construction and application of delay detonator.
  - c) Describe the procedure of roof bolting support in underground mines.
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