

22375

23124

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 Compound Lodes.
- (b) State the working of ore chute.
- (c) Define the term Raise & Winze with sketch.
- (d) Explain the importance of Undercut.
- (e) Define Finger Raise.
- (f) Enlist any four Raising method.
- (g) State how sublevel is formed.

2. Attempt any THREE of the following :

12

- (a) With a neat sketch, explain the making of a raise by Alimak Raise Climber.
- (b) Define Breast stopping. With a layout, explain the working of breast stopping.
- (c) Draw a layout of overhand stopping method, illustrate the working stating its advantages.
- (d) State the advantages and disadvantages of Block Caving.



- 3. Attempt any THREE of the following : 12**
- (a) Compare percussive drilling with Rotary drilling.
 - (b) With a layout, explain the operations to be carried out in Block caving.
 - (c) State the merits & demerits of filling material in Cut & Fill method. Explain the working of this method with respect to its applicability conditions, direction of stopping & advantages.
 - (d) Draw a layout of sublevel stopping, state its applicability, preparatory work, drilling & blasting.
- 4. Attempt any THREE of the following : 12**
- (a) With a neat sketch, elaborate the surface arrangement for Rotary Boring.
 - (b) Explain how Temporary lining is done in a sinking shaft.
 - (c) Describe the arrangements to be made for speedy disposal of debris in a sinking shaft.
 - (d) Enlist different types of permanent linings and explain the process of Brick lining.
 - (e) Explain advantages & disadvantages of vertical shaft & inclined shaft.
- 5. Attempt any TWO of the following : 12**
- (a) Define the deviation of Borehole. Explain the factors affecting deviation of borehole and enlist the methods of detecting deviation.
 - (b) Define the term staple pit and explain how will you carry out the process of deepening a working shaft using staple pit.
 - (c) Enumerate the special methods of shaft sinking and explain piling method.
- 6. Attempt any TWO of the following : 12**
- (a) Draw a layout of sublevel caving and explain its working.
 - (b) Define V.C.R. Explain the method.
 - (c) Explain the working of a shrinkage stopping stating its merits & demerits with a layout.
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