

22381

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 expendable and non-expendable minerals.
 - b) Define run of mine grade.
 - c) Define annuity.
 - d) Define crushing and grinding.
 - e) List four ores of Copper.
 - f) State Hoskold's formula.
 - g) State meaning of sampling.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) Explain the highlights of the national mineral policy 2019.
 - b) State in short conservation of minerals with examples.
 - c) Justify the importance of iron and steel industry in India.
 - d) What is the role of mineral industry in national economy?
- 3. Attempt any THREE of the following:** **12**
- a) Compare computed grade with effective grade of ore.
 - b) Distinguish resource and reserve categorisation and their types.
 - c) Define salting with various salting method and state precaution to safe guard against salting.
 - d) Define annuity. Describe in short types of annuity.
- 4. Attempt any THREE of the following:** **12**
- a) What is Sampling? Write any four sampling methods.
 - b) Explain diminishing annuity method for redemption of capital.
 - c) A machine costing Rs. 20,000/- was purchased and was installed the installation charges are Rs. 5,000/-. If the scrap value is Rs. 5,000/- and the use full life is 10 years. Calculate the yearly depreciation by straight line method.
 - d) Describe gravity separation methods for ore mineral to gangue minerals.
 - e) Explain the properties of minerals which are used for selection of methods of ore dressing, also state the importance of ore dressing.
- 5. Attempt any TWO of the following:** **12**
- a) How will you prepare the sample for assay value.
 - b) How will you carry out the sampling procedure for particular ore deposit.
 - c) Explain the included area method in computation of mineral reserve.

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

- a) How will you estimate the weighted average grade of stop block and explain why minimum stopping width is essential.
 - b) Define depreciation and describe any three methods of calculation of depreciation.
 - c) Explain the black and dodge types of crushers with neat sketches, compare both crushers based on types of jaws, type of blades, angle of nip and prime moving machinery.
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