

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VIII (Old) EXAMINATION – WINTER 2019****Subject Code: 182202****Date: 21/11/2019****Subject Name: Advance Mining Methods****Time: 02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain the basic structure of powered supports with the help of neat labeled diagram. **07**  
(b) List out different criterias for the selection of powered supports. **07**
- Q.2** (a) List out the general considerations of horizon mining. Write its advantages and disadvantages. **07**  
(b) Explain the extraction of thin seam using coal plough in uni- and bi-direction. **07**
- OR**
- (b) Explain the advantages and disadvantages of thick seam mining. **07**
- Q.3** (a) List out different problems associated with thick seam mining. **07**  
(b) Using a labeled layout describe horizontal slicing in both ascending and descending order. Also give its advantages and disadvantages. **07**
- OR**
- Q.3** (a) In what conditions sublevel caving can be used? Explain the working of this method along with its advantages and disadvantages. **07**  
(b) Using a labeled layout describe inclined slicing. Also give its advantages and disadvantages. **07**
- Q.4** (a) Explain different conditions suitable for hydraulic mining. **07**  
(b) Using a neat layout explain the working of hydraulic mining. **07**
- OR**
- Q.4** (a) Explain the transportation arrangement used in hydraulic mining. **07**  
(b) Give the advantages and disadvantages of hydraulic mining. **07**
- Q.5** (a) List the favourable conditions for underground coal gasification. Also give its advantages and disadvantages. **07**  
(b) Explain underground coal gassification method with its different phases. **07**
- OR**
- Q.5** (a) Explain deep sea mining method of manganese nodules. **07**  
(b) Name different ores that can be mined out by leaching process. Give an overview of mining by leaching and its advantages. **07**

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