

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– VIII (New) EXAMINATION – WINTER 2019****Subject Code: 2182202****Date: 29/11/2019****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.

MARKS

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|------------|--|-----------|
| Q.1 | (a) Write the factors affecting the design of powered supports system. | 03 |
| | (b) Explain the functions of power support system. | 04 |
| | (c) Explain horizon mining with its features. State its advantages and disadvantages. | 07 |
| Q.2 | (a) Write the conditions suitable for the application of horizon mining. | 03 |
| | (b) What are the problems in mining of thick coal seams? | 04 |
| | (c) What are the main components of powered supports system? Explain Chock-Shield support with neat sketch. | 07 |
| OR | | |
| | (c) What are the planning considerations in horizon mining system? Explain briefly. | 07 |
| Q.3 | (a) What do you understand by slice mining? | 03 |
| | (b) Write the applicability conditions of inclined slicing with caving in descending order and inclined slicing with filling in ascending order? | 04 |
| | (c) What is horizontal slicing method? Discuss horizontal slicing in ascending order with stowing with neat sketch | 07 |
| OR | | |
| Q.3 | (a) What are the factors affecting the division of a seam into slices? | 03 |
| | (b) What are the problems in mechanization of thin seam working? Explain briefly. | 04 |
| | (c) Discuss sublevel caving with neat sketch in detail. | 07 |
| Q.4 | (a) What is hydraulic mining of coal? Write the conditions suitable for hydraulic mining of coal. | 03 |
| | (b) What is diagonal slicing method? Explain briefly. | 04 |
| | (c) What are the different ways are used for the hydraulic transport of broken coal? Explain briefly. | 07 |
| OR | | |
| Q.4 | (a) Explain layout of working for hydraulic mining with neat sketch. | 03 |
| | (b) Explain hydro-chemical and biochemical methods of mining. | 04 |
| | (c) How development and extraction is done in hydraulic mining operations? Explain briefly. | 07 |
| Q.5 | (a) Write the conditions suitable for underground gasification of coal. | 03 |
| | (b) What are the advantages and disadvantages of hydraulic mining? | 04 |
| | (c) What are the different methods of establishing linkages between boreholes in underground coal gasification? Explain briefly. | 07 |
| OR | | |
| Q.5 | (a) What are the advantages of underground coal gasification? | 03 |
| | (b) Write a note on ore mining by leaching. | 04 |
| | (c) Explain deep sea mining for manganese nodules. | 07 |
