

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– V (New) EXAMINATION – WINTER 2019****Subject Code: 2152206****Date: 25/11/2019****Subject Name: Underground coal Mining****Time: 10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

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

		MARKS
Q.1	(a) Explain: Longwall method of Mining.	03
	(b) What is stratified deposit? List out its distribution in India.	04
	(c) Explain in detail: (a) In-situ theory (b) Drift theory	07
Q.2	(a) List out various coal face machineries used for continuous bord and pillar mining method with applicability.	03
	(b) Explain the cycle of operation for longwall mining method.	04
	(c) Explain with neat sketch coal cutting machine with its advantage and disadvantages.	07
OR		
	(c) Explain with neat sketch side discharge loader with its selection criteria.	07
Q.3	(a) Explain: Bord and Pillar with neat sketch	03
	(b) Write down merits and demerits of bord and pillar against longwall mining method.	04
	(c) Explain the principles of pillar extraction techniques with its problems with factors influenced on it.	07
OR		
Q.3	(a) Explain: Factor of safety	03
	(b) Explain: Size of panel and Size of pillar	04
	(c) Explain the development of bord and pillar working using gathering arm loaders and shuttle cars.	07
Q.4	(a) Write the advantages of powered supports.	03
	(b) Explain: planning steps for longwall mining.	04
	(c) Explain with neat sketch: SERDS with its merits and demerits.	07
OR		
Q.4	(a) Compare the advantages of longwall advancing and longwall retreating.	03
	(b) What are the categories of powered supports? Explain in brief.	04
	(c) Explain each elements of longwall face with a sketch.	07
Q.5	(a) Write a short note on preparatory arrangement for stowing.	03
	(b) Write down merits and demerits of stowing.	04
	(c) Explain with sketch (a) Hydraulic Profile (b) Rate of stowing	07
OR		
Q.5	(a) Define stowing with their principle.	03
	(b) Write note on pipe jam in hydraulic stowing.	04
	(c) List out different stowing methods and explain any two with neat sketch.	07
