

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-V (NEW) - EXAMINATION – SUMMER 2018**

**Subject Code:2152206**

**Date:04/05/2018**

**Subject Name:Underground coal Mining**

**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.

	<b>MARKS</b>
<b>Q.1</b> (a) Describe the origin of stratified deposits.	<b>03</b>
(b) Describe various factors influencing choice of mining methods.	<b>04</b>
(c) Explain board and pillar method of mining with neat sketch.	<b>07</b>
<b>Q.2</b> (a) Discuss shape and size of panel system used in mining.	<b>03</b>
(b) Explain drift theory and in-situ theory of origin of coal.	<b>04</b>
(c) Explain longwall advancing method with neat sketch.	<b>07</b>
<b>OR</b>	
(c) Explain longwall retreating method with neat sketch.	<b>07</b>
<b>Q.3</b> (a) Discuss the cycle of operation in mining.	<b>03</b>
(b) Explain spontaneous heating and incubation period.	<b>04</b>
(c) Explain the methods of extraction of pillars for board and pillar method of mining.	<b>07</b>
<b>OR</b>	
<b>Q.3</b> (a) Discuss the application of panel system.	<b>03</b>
(b) Explain the classification of mining methods.	<b>04</b>
(c) Explain barrier and preparatory stoppings with neat sketch.	<b>07</b>
<b>Q.4</b> (a) Discuss the principle of designing pillar extraction techniques.	<b>03</b>
(b) What are the precautions against fire during and after depillaring operation?	<b>04</b>
(c) Explain hydraulic stowing method with neat sketch.	<b>07</b>
<b>OR</b>	
<b>Q.4</b> (a) What are the arrangements for hydraulic stowing method?	<b>03</b>
(b) Explain the working of load haul dumper and side discharge loader.	<b>04</b>
(c) Explain the layout of working for the required output, length and direction of faces in longwall mining methods.	<b>07</b>
<b>Q.5</b> (a) Define stowing and write their principle of working.	<b>03</b>
(b) Differentiate between pneumatic and mechanical stowing.	<b>04</b>
(c) Explain room and pillar method of mining with neat sketch.	<b>07</b>
<b>OR</b>	
<b>Q.5</b> (a) Describe the hand packing method of stowing.	<b>03</b>
(b) What are the arrangements for transportation of material on surface and underground in stowing method?	<b>04</b>
(c) Differentiate between board & pillar method and long wall method.	<b>07</b>

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