Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V(New) • EXAMINATION – WINTER 2016

Subject Code:2152206 **Date:24/11/2006**

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		**Short Questions**	**14**
	1	List of explosive used in underground mine.	
	2	Which type of supported used in underground coal mining?	
	3	What is barrier?	
	4	Define the bended constituents of coal.	
	5	What is spontaneous heating?	
	6	Define the stowing.	
	7	What is pillar?	
	8	Explain the applicability of long wall mining.	
	9	Define the formulas of **Percentage of extraction** and **Tributary area.**	
	10	What is coking coal?	
	11	What is incubation period?	
	12	Explain solid blasting?	
	13	Define principle of stowing.	
	14	Define the list out of machine used in underground mines.	
Q.2	**(a)**	Explain in detail drift theory of origin of coal.	**03**
	(b)	Explain pneumatic stowing and mechanical stowing.	**04**
	(c)	Describe the support system used in long wall method of mining.	**07**
		OR	
	(c)	Describe the extraction of pillars in contiguous seam.	**07**
Q.3	**(a)**	Explain the classification on underground coal mining method.	**03**
	(b)	What are the disadvantages of stowing methods?	**04**
	(c)	Explain Bord and Pillar method with neat sketch.	**07**
		OR	
Q.3	**(a)**	What are the merits and demerits of advanced long wall method?	**03**
	(b)	Which Type of machinery is used in u/g mining? And what is cycle of operation?	**04**
	(c)	Write notes on Hydraulic profile and H: L ratio in hydraulic stowing system.	**07**
Q.4	**(a)**	Write a note on Mining by Sublevel Caved Rooms.	**03**
	(b)	Explain the working of (a) load haul dumper (b) side discharge loader.	**04**
	(c)	Write short note on spontaneous heating and incubation period.	**07**
		OR	
Q.4	**(a)**	Give the principle of designing pillar extraction techniques.	**03**
	(b)	Explain depillaring operation in Bord and pillar mining.	**04**
	(c)	Explain hydraulic profile and rate of stowing.	**07**
Q.5	**(a)**	Explain with sketch: Barrier and preparatory stopping in Board and Pillar Method of mining.	**03**
	(b)	What do you understand by term ‘Panel System’ of coal mining? How the size of a panel is arrived?	**04**
	(c)	What is the factor affecting choice of mining method in u/g mine?	**07**
		OR	

Q.5	**(a)**	Why roof bolting system widely adopted in present mining system? Explain it.	**03**
	(b)	What are the precautions against fire during and after depillaring operation?	**04**
	(c)	Write characteristics of roofs, Floors and associated rocks affect the working in underground coal mines?	**07**

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