

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER V • EXAMINATION – WINTER - 2012****Subject code: 152205****Date: 22-01-2013****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.

- Q.1** (a) Classify various under ground coal mining methods . 07
(b) What are the various factors affecting the selection of u/g coal mining methods. 07

- Q.2** (a) Describe retreating methods of Long wall system . 07
(b) Explain drift theory and in-situ theory of origin of Coal. 07

OR

- (b) Write notes on : Pneumatic stowing & mechanical stowing 07

- Q.3** (a) Write notes on : [1] Hydraulic profile and H: L ratio in hydraulic stowing system. 07
(b) What are the advantages of stowing methods ? 07

OR

- Q.3** (a) Explain with sketch : Barrier and preparatory stopping in Board and Pillar method of mining. 07
(b) What are the special arrangements in development in steep seams by bord and pillar methods ? 07

- Q.4** (a) Explain meaning of following terms : (1) incubation period , (2) Cyclic long wall and non cyclic long wall methods. 07
(b) Describe depillaring system for a coal seam 4.5 m thick in board & pillar methods. Also explain sequence of pillars extracted with sketch. 07

OR

- Q.4** (a) What are the precaution against fire during and after depillaring operation ? 07

- Q.4** (b) What are the factors considered for selection of optimum length of a long wall face ? 07

- Q.5** (a) Describe behavior of roof during depillaring with caving. 07
(b) Explain general arrangement of a sand stowing plant with surface and underground face arrangement. 07

OR

- Q.5** (a) Write notes on : (1) Room & pillar method 07
(b) Why roof bolting system widely adopted in present mining system? Explain it. 07
