

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. Sem-Vth Examination December 2010

Subject code: 152205

Subject Name: Underground Coal Mining

Date: 20 /12 /2010

Time: 03.00 pm - 05.30 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) Explain: origin of coal and theories of origin of coal. 07
(b) Describe the properties of roof with its various testing methods. 07

- Q.2 (a) Give a classification of Mining with its brief discussion of each. 07
(b) Give the factors influencing choice of mining methods. 07

OR

- (b) Give the factors affect on coalification. 07

- Q.3 (a) Classification of Bord and pillar mining methods. 07
(b) Extraction of pillars in contiguous seam. 07

OR

- Q.3 (a) Give the principal of designing pillar extraction techniques. 07
(b) Give the method of development district with layout and manpower if seam is 8.53 m thick, the dipping of seam 1 in 14 and pillars were 27.4 m * 27.4 m from centre to centre. 07

- Q.4 (a) Explain the merits and demerits of long wall advancing and Retreating long wall. 07
(b) Give the types of modern shearer with its components description in brief. 07

OR

- Q.4 (a) Elements of a longwall face: The face, Tail gate, Main gate, Goaf line, Span, Stable and Buttock 07
(b) Which factors are considered in organization of long wall face? 07

- Q.5 (a) What is stowing? List out its methods and advantages of stowing. 07
(b) Draw a neat sketch of general arrangement of a sand stowing with its brief discussion. 07

OR

- Q.5 (a) Explain: Hydraulic Profile and Rate of Stowing. 07
(b) Describe a Hydraulic stowing with its applicability, preparatory arrangement, merit and demerits. 07
