

MODEL TEST PAPER FOR AMIE EXAMS



**MINE MANAGEMENT AND
LEGISLATION**

TEST PAPER 1



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MINE MANAGEMENT AND LEGISLATION*Time: Three Hours**Maximum Marks: 100*

Answer five questions, taking ANY TWO from Group A, any two from Group B and all from Group C.

All parts of a question (a, b, etc.) should be answered at one place.

Answer should be brief and to-the-point and be supplemented with neat sketches.

Unnecessary long answer may result in loss of marks.

Any missing or wrong data may be assumed suitably giving proper justification.

Figures on the right-hand side margin indicate full marks.

Group A

1. (a) Explain in brief the role of management in mining organizations. State and explain various principles of management. 8
- (b) Compare between "line organization" and "functional organization" with respect to their applicability, working procedure and limitation. 6
- (c) What do you understand by the term span of control? Explain briefly the span of control of a manager on an underground coal mine. 6
2. (a) Differentiate human factor engineering and human resource planning. Explain in detail. What are the approaches of human resource planning? 8
- (b) How is the stop watch time study carried out for solid-blasting operation in a coal face? Explain the procedures. 6
- (c) What do you understand by time study and work measurement? How can it be used as an effective tool for an organization? 6
3. (a) What do you understand by time and motion study? How is it useful for an organization? 6
- (b) Discuss the concept of inventory control. Mention different types of inventory control policies. 8
- (c) In the context of materials management what do you understand by ABC 6

analysis and its utility for inventory control?

4. (a) What are the components of cost to be considered for calculating the cost per ton (CPT) of a mine? Assume your own condition with reasoning. How do you control the rise in CPT of opencast as well as underground mine. 7
- (b) What do you mean by cost in a business organization? What are the elements of cost? Draw a classification of cost. What are components of total cost. Define (i) differential cost, incremental cost (ii) overhead cost. 6
- (c) What do you understand by break even analysis in financial management? What is its importance? What are the pricing methods used for break even analysis? 7

Group B

5. (a) Narrate briefly the cause of formation of mining legislation. Describe the historical evidence of development and subsequent amendment of the Mines Acts, Mines Rules, Mines Regulation under different circumstances. 8
- (b) State the duties and responsibilities of owners, agents and managers as per the Mines Act, 1952. 6
- (c) Explain the reasons of framing DGMS circulars and Bye-laws in different systems of mining. 6
6. (a) Enumerate the duties of Workman's Inspector and Safety Committee as per the Mines Rules, 1955. 8
- (b) Write the stipulated provisions of the Mines Rules, 1955 regarding functions of the Safety Committee. 6
- (c) Differentiate according to mining legislation (i) Mine closure (ii) Mine abandonment. Why mine abandonment plan is submitted. 6
7. (a) Write down the duties of following mentioned in statutes: 8
- (i) duty of surveyor when mine working has approached to disused or water logged working.
- (ii) duty of banksman or onsetter after stoppage of winding for more than 2 hours.

- (iii) duty of CM when mine is intended to re-open after discontinuance of working for more than 60 days.
- (iv) When a Colliery Manager is supposed to frame bye laws?
- (b) As a part of disaster management in the case of explosion in underground coal mine, narrate the "emergency action plan". 4
- (c) Write short notes on 8
- (i) Accident Statistics and Accident report
- (ii) Root cause and Apparent cause of accident
- (iii) Noise and Vibration
- (iv) Personal protective equipment
8. (a) Write short notes on 10
- (i) Rescue apparatus
- (ii) Rescue trained persons
- (iii) Rescue operations
- (iv) Disaster management after heavy accident in underground.
- (b) Clearly specify provision given in DGMS circulars 10
- (i) Stone dust barriers
- (ii) Bolting for poor roof condition
- (iii) Support of slips and weak planes
- (iv) Treatment of coal dust with water

Group C

9. Answer the following in brief: 20
- (i) In the Coal Mines Regulation 1957, the duties and responsibilities of the manager are prescribed in
- (a) Regulation 39
- (b) Regulation 40
- (c) Regulation 41
- (d) Regulation 43
- (ii) Under which one of the following system, Zener barriers are associated?
- (a) Increased safety

- (b) Intrinsic safety
 - (c) Flame proof
 - (d) Statistically safety
- (iii) In the terminology associated with fault, the angle, which a fault plane makes with vertical plane, is termed as
- (a) strike
 - (b) dip
 - (c) hade
 - (d) throw
- (iv) According to mine legislation in India, the minimum dimension of width and height of underground travelling roadways (in m) are
- (a) 1.2 and 1.5
 - (b) 1.5 and 1.8
 - (c) 1.5 and 1.2
 - (d) 1.8 and 1.5
- (v) The gas that replace the mine atmospheric air after an explosion in an underground coal mine is known as
- (a) black damp
 - (b) white damp
 - (c) stink damp
 - (d) after damp
- (vi) The first preferred way to resolve a dispute between the two contracting parties is
- (a) arbitration
 - (b) litigation
 - (c) coercion
 - (d) negotiation
- (vii) Smog, a type of air pollution, common in coal mining township is visible particulate matters concentrating near earth's surface that mainly contains
- (a) NO₂ and CO
 - (b) SO₂ and CO₂
 - (c) SO₂ and H₂S
 - (d) CO and CO₂

- (viii) Power factor in a mine can be corrected using the
 - (a) induction motor
 - (b) transformers
 - (c) synchronous motor and capacitor
 - (d) inductors
- (ix) Ergonomics is the synonym of
 - (a) organizational behaviour
 - (b) human behaviour
 - (c) human factors
 - (d) environmental behaviour
- (x) Modern mine management follow the organisation of type
 - (a) line organization
 - (b) line, staff and committee organization
 - (c) line and staff organization
 - (d) functional organization

(Refer our course material for answers)