

QUESTION 1

SAFETY MANAGEMENT

- 1.1 Describe the principles of Visible Felt Leadership and how it should be structured to get the maximum benefit for safety. (15)
- 1.2 Name and explain any fifteen of the 18 OSHAS 18001 elements. (15)
- [30]**

QUESTION 2

OCCUPATIONAL HYGIENE

- 2.1 Mines have to implement hearing conservation programmes as required by the Mine Health and Safety Act. Discuss three requirements for a successful implementation of a hearing conservation programme. (6)
- 2.2 Define a homogeneous exposure group and its importance to the implementation of a hearing conservation programme. (4)
- 2.3 State the five key elements that must be addressed by an occupational hygiene programme on airborne pollutants. (10)
- [20]**

QUESTION 3

ROCK ENGINEERING

- 3.1 As a Manager of a mine you have decided to embark on a new “falls of ground” campaign. This campaign is aimed at empowering the workers at the coal surface, specifically continuous miner and shuttle car operators, cable handlers etc, to recognise and react to changed roof hazards that occur during the shift. To achieve this objective you will need to provide a detailed programme of training material, including models and slides. The objective is to explain why falls of ground occur in bord and pillar workings and to show how they may be minimised. Prepare the scope of the lecture material in outline. **[16]**

QUESTION 4

LOGISTICS (COAL CONVEYING)

- 4.1 Provide a sketch of a typical gravity take up conveyor system with all the conveyor system with the conveyor components shown. On the sketch show all the safety systems that will be required to operate the conveyor and explain the functions of each safety system. [20]

QUESTION 5

COAL PROCESSING

- 5.1 Briefly describe the two main suspensions or solutions used in coal processing and their properties for the following:
- (a) Coal beneficiation (4)
 - (b) Recovery of water from the superfine coal (4)
- 5.2 Discuss the effect of size distribution of ROM coal in the coal processing plant. (6)
- [14]

TOTAL MARKS: [100]