

PRACTICE SET
End Semester Examination, December, 2025

Program: DIPLOMA (MINING)

Semester: V

Subject: MINE ENVIRONMENTAL ENGINEERING

Subject Code: 8D.331

UNIT I

SECTION A (5 marks)

1. List and briefly explain the different classes of fire encountered in mines.
2. What are portable fire extinguishers? State their applicability and ideal placement in mines.
3. Explain the crossing point method used to study spontaneous combustion of coal.
4. Give a brief idea about Mine Fire. Discuss essential conditions for Mine fire.

Section B – (10 Marks)

5. Explain the mechanism of spontaneous heating in coal mines. Discuss the factors that influence it.
6. Discuss the maintenance and inspection procedures for portable fire extinguishers used in mines.
7. Suggest the various preventive measures you will take to control underground mine fire.
8. What are the different types of stopping used for sealing a fire? Discuss about the explosion proof stopping with its specification. Draw suitable diagram.
9. According to CMR 2017, state the time interval for testing the percentage of carbon monoxide gas and analyzing Graham's ratio. Mention the relevant regulation name and number.
10. Explain the precautions necessary to prevent spontaneous heating in underground mines.

SECTION C (20 marks)

11. In underground you have seen various types of stopping used for sealing a fire, classify them. Illustrate about the explosion proof stopping with its specification. Sketch suitable diagram.
12. Name the different types of flame-proof fire extinguishers used in mines. Explain where and when each type is used, depending on the kind of fire.

UNIT II

SECTION A (5 marks)

13. Brief discuss about Graham's ratio. Discuss the symptoms of CO/O₂ deficiency.
14. Explain the causes of Firedamp explosion.
15. List the main components of firedamp and mention its lower and upper explosive limits.
16. Discuss the coal dust explosion. Illustrate the factors governing coal dust explosion.

SECTION B (10 marks)

17. Explain classification of coal seam according to their degree of gassiness according to [CMR] 2017, regulation-133.
18. What is coward diagram? Draw its diagram. Discuss the significance of this diagram.
19. Enumerate the fittings of fire stopping and draw its diagram.
20. Discuss in detail about the causes and preventions for firedamp explosion.

SECTION C (20 marks)

21. If there is a risk of explosion in a coal mine, how would you build an explosion-proof wall (stopping) to protect the mine? What is a temporary stopping, why is it used, and what are the different types?
22. What is a firedamp explosion and a coal dust explosion in coal mines? What are the limits at which they can explode? Explain the main safety measures used to prevent these explosions.

UNIT III

SECTION A (5 marks)

23. What is the specification for both light and heavy stone dust barriers?
24. Differentiate ignition temperature and lag on ignition.
25. What is stone dust? Write the desirable qualities of stone dust.

SECTION B (10 marks)

26. What are the steps to be taken for prevention against coal dust explosion?
27. Discuss about the different types of stone dust barriers.
28. Discuss about stone dust barriers. Also discuss the properties and types of stone dust barriers in detail.
29. Write down the salient features for measures against coal dust.
30. Enumerate the preventive measures to be taken at face to prevent from coal dust explosion.

SECTION C (20 marks)

31. Imagine you are the manager of an underground coal mine. What safety steps would you take if there is a chance of a coal dust explosion
32. What is coal dust, and why is it dangerous in underground coal mines? List and explain the factors that affect its ability to cause an explosion.

UNIT IV

SECTION A (5 marks)

33. Enumerate the name of all rescue apparatus used in mines.
34. Discuss the rescue apparatus gas mask.

SECTION B (10 marks)

35. Discuss the principle & components of self-contained breathing apparatus. [understand]
36. What is inundation? Discuss the various preventions to be taken for inundation in mines.
37. What are the major causes of Inundation in mines? Discuss about its prevention.
38. Discuss the self-rescuer used for rescue in mines.

39. Explain the precautions to be taken while approaching old water-logged areas in underground mines.
40. Give the case study of inundation accidents of Mahabir Colliery of Indian mines.

SECTION C (20 marks)

41. According to the Coal Mines Regulations, 2017, what is the provisions while approaching a water-logged area in an underground coal mine?

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Disclaimer: - This is a Practice set. The Question in End term examination will differ from the practice. This practice set is meant for practice only.