

**PRACTICE SET**

**End Semester Examination, Spring- 2026**

**Program: B.TECH (MINING)**

**Semester: VI**

**Subject: ADVANCED UNDERGROUND MINING**

**Subject Code: 8PCCMiE308**

<b>Course Outcomes</b>	<b>Description</b>
CO1	Define & explain the underground mining of thick seam & hydraulic mining.
CO2	Describe the working of hydraulic mining.
CO3	Analyze the design of coal gasification techniques.
CO4	Design & solve the deep mining method & special mining methods.

**UNIT I**

**Section II (10 marks)**

1. Describe transversely inclined slicing with its advantages. CO 1(Understand)
2. Define horizontal slicing with sketch. Write its disadvantages and draw diagram of this method. CO 1(Understand)
3. Describe the sub- leveling caving method of thick seam with help of diagram. CO 2 (Apply)
4. Suggest the factors affecting division of a seam into slices. Classify the thick seam mining method in details. CO 1(Understand)
5. Diagonal slicing is a type of slicing method of thick seam in India. Describe diagonal slicing with its advantages. CO 1(Apply)

**Section III (20 marks)**

6. Inclined slicing is used for thick seam of coal. Brief about inclined slicing. Discuss the applicability conditions of inclined slicing in following-
  - (i) Descending order method
  - (ii) Ascending order method CO 1(Apply)
7. BG method is most popular in SCCL. Brief about blasting gallery method with applicability, advantages, disadvantages & diagram. CO 1 (Apply)

## **UNIT II**

### **Section II (10 marks)**

8. Discuss the two operations of hydraulic mining. CO 2(Understand)
9. Briefly explain the hydraulic transport of broken coal in hydraulic mining. CO 2 (Understand)
10. Discuss the conditions suitable for hydraulic mining of coal. CO 2(Apply)
11. Explain the advantages and disadvantages of hydraulic mining. CO 2(Understand)

### **Section III (20 marks)**

12. The seam with suitable inclination is mined with hydraulic mining. Can you detailed this method in brief with applicability, advantage & disadvantages? CO 2 (Apply)

## **UNIT III**

### **Section II (10 marks)**

13. Discuss the factors which are suitable for underground gasification of coal. CO 3 (Understand)
14. Explain the concept of underground gasification of coal. CO 3 (Understand)
15. Discuss about drilling method for establishing linkage between injection & production hole. CO3 (Understand)
16. Can you state the energy potential of the deposit for gasification? Discuss the main principles of underground coal gasification. CO 3 (Understand)
17. Elaborate the technology involved in underground coal gasification. CO 3 (Apply)
18. Explain the three methods of establishing linkages between boreholes. CO 3 (Understand)

### **Section III (20 marks)**

19. Explain the mechanism of Underground gasification of coal. Enumerate the suitability conditions of this method. What are the advantages and disadvantages of underground gasification of coal? CO 3 (Apply)
20. If the injection hole & production hole in underground gasification is not linked. Can you suggest methods for linkage of borehole? CO 3 (Analyze)

## **UNIT IV**

### **Section II (10 marks)**

21. Discuss the placer mining method. CO 4 (Understand)
22. What is Bio leaching method? And what are the problems associated with it? CO 4 (Understand)
23. Can you explain in brief about high wall mining? CO 4 (Understand)
24. Explain leaching method and write its minimum conditions required. CO 4 (Understand)
25. Differentiate between bucket dredging & hydraulic dredging in details with suitable sketch. CO 4 (Apply)
26. Discuss about the high wall mining used in India where deposit is available after greater depth of overburden with applicability, advantages & disadvantages. CO 4 (Apply)
27. Enumerate the various problems associated when we go for deep mining of coal. CO 4 (Apply)
28. Explain in details the methods for extracting placer deposit. CO 4 (Understand)

**Summary Sheet:**

**CO Wise**

<b>CO</b>	<b>Q. No</b>	<b>Marks</b>
CO1	1,2,3,4,5,6,7	90
CO2	9,10,11,12	60
CO3	13,14,15,16,17,10,11,18,19,20	100
CO4	21,22,23,24,25,26,27,28	80
<b>Total</b>		<b>330</b>

**Unit Wise**

<b>Unit</b>	<b>Q. No</b>	<b>Marks</b>
Unit 1	1,2,3,4,5,6,7	90
Unit 2	9,10,11,12	60
Unit 3	13,14,15,16,17,10,11,18,19,20	100
Unit 4	21,22,23,24,25,26,27,28	80
<b>Total</b>		<b>330</b>

**Blooms Taxonomy Level (BTL) Wise**

<b>BTL</b>	<b>Q. No</b>	<b>Marks</b>
LOT	1,2,4,6,7,9,11,13,14,15,16,18,21,22, 23,24,28	100
HOT	3,5,6,7,10,12,17,19,20,25,26,27	230
<b>Total</b>		<b>330</b>

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