

**End Semester /Reappear (Semester IV) Examination May 2025**

**Programme: Diploma (MiE)**  
**Course: Underground Coal Mining**  
**Course Code: 8D.254**  
**Enrolment no. \_\_\_\_\_**

**Full Marks: 70**  
**Time: 3 Hrs.**

**Section I**

**1. Short Answer type questions. Answer any four. 4 x 5 = 20**

- Describe in brief the retreating longwall method of coal mining.
- Discuss about rope stitching used in underground mines.
- State in brief the factors influencing choice of Bord & Pillar coal mining methods.
- Describe in brief the advancing longwall method of coal mining.
- Describe in brief the factors which affect the magnitude of subsidence.
- What is roof bolting? Draw sketch for it.

**Section II**

**Long Answer type questions. Answer any three. 3 x 10 = 30**

- Enumerate the different factors affecting subsidence in mining areas.
- Enumerate the various types of support used in underground with proper sketch.
- Describe the depillaring methods of Bord & pillar mining in underground coal mines.
- Draw a sketch of single unit & double unit longwall face and label all parts.
- Describe with sketch the Arch/ Dome theory of subsidence.

**Section III**

**Application based questions. Answer any one. 1 x 20 = 20**

- Enumerate the similarities & contrasts between hydraulic prop and friction prop.
- Describe the method of calculation of percentage extraction in development in Bord & Pillar mining. A pillar size of (40\*40) m, center to center has gallery width of 4m. Calculate the extraction % during development.
- Design an underground longwall mining layout with all the terminology & both method of extraction techniques.

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