




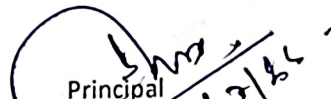
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| Discipline:<br>Mining<br>Engg.              | Semester: 5 <sup>TH</sup>                       | Name of the Teaching Faculty: D. S. PRADHAN   |
| Subject:<br>Mine<br>Hazard<br>and<br>safety | No. of<br>Days/per week<br>class allotted:<br>4 | Semester From Date: 14/ 07/2025 To Date: 15/11/2025<br>No. of Weeks: 15                               |
| Week  | Class Day                                       | Theory/Practical Topics   |
| 1 <sup>st</sup>                             | 01  | Composition of atmospheric air. Different mine gases, their properties and physical effects .         |
|   | 02  | State fire damp, black damp, stink damp, white damp and after damp in mines.                          |
|   | 03  | Describe flame safety lamp & its working principle.   |
|   | 04  | Explain gas testing by flame safety lamp by accumulation test & percentage test                       |
| 2 <sup>nd</sup>                             | 01  | State precaution for gas testing.   |
|   | 02  | Describe various parts of flame safety lamp, special features. State limitations of flame safety lamp |
|   | 03  | Describe gradual exudation, blower & outbursts of firedamp in U/g workings.                           |
|   | 04  | Describe gradual exudation, blower & outbursts of firedamp in U/g workings.                           |
| 3 <sup>rd</sup>                             | 01  | Describe gradual exudation, blower & outbursts of firedamp in U/g workings.                           |
|   | 02  | Describe gradual exudation, blower & outbursts of firedamp in U/g workings.                           |
|   | 03  | Describe gradual exudation, blower & outbursts of firedamp in U/g workings.                           |
|   | 04  | Describe gradual exudation, blower & outbursts of firedamp in U/g workings.                           |
| 4 <sup>th</sup>                             | 01  | Define incubation period  |
|   | 02  | Define spontaneous heating and its causes and effects.  |
|   | 03  | Define spontaneous heating and its causes and effects.  |
|   | 04  | Define spontaneous heating and its causes and effects.  |
| 5 <sup>th</sup>                             | 01  | Define spontaneous heating and its causes and effects.  |
|   | 02  | State preventive measures against spontaneous heating.  |
|   | 03  | State preventive measures against spontaneous heating.  |
|   | 04  | State preventive measures against spontaneous heating.  |

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| 6 <sup>th</sup>  | 01 | State preventive measures against spontaneous heating.   |
|                  | 02 | Explain CO/O <sub>2</sub> ratio & CO <sub>2</sub> /O <sub>2</sub> ratio.   |
|                  | 03 | Describe coal dust explosion & fire damp explosion with their causes & prevention  |
|                  | 04 | Describe coal dust explosion & fire damp explosion with their causes & prevention  |
| 7 <sup>th</sup>  | 01 | Describe coal dust explosion & fire damp explosion with their causes & prevention  |
|                  | 02 | State inflammability of coal dust & fire damp.   |
|                  | 03 | State inflammability of coal dust & fire damp.   |
|                  | 04 | Explain Coward's diagram   |
| 8 <sup>th</sup>  | 01 | State prevention, suppression & treatment of dust.   |
|                  | 02 | State prevention, suppression & treatment of dust.   |
|                  | 03 | Describe sampling of dust in Mines.  |
|                  | 04 | Stone dust barrier   |
| 9 <sup>th</sup>  | 01 | State sources of water in mines & its danger.  |
|                  | 02 | State precaution against inundation.   |
|                  | 03 | Describe burnside safety boring apparatus  |
|                  | 04 | State precaution while approaching water logged area   |
| 10 <sup>th</sup> | 01 | Describe water dams- its construction & design. (Without derivation of formula)  |
|                  | 02 | Describe water dams- its construction & design. (Without derivation of formula)  |
|                  | 03 | Explain water danger plan.   |
|                  | 04 | Statutory provision for working near water body.   |
| 11 <sup>th</sup> | 01 | Define illumination and its units  |
|                  | 02 | Laws of Illumination   |
|                  | 03 | Standards of lighting at different parts of mine as per mine regulation  |
|                  | 04 | Standards of lighting at different parts of mine as per mine regulation  |
| 12 <sup>th</sup> | 01 | Standards of lighting at different parts of mine as per mine regulation  |
|                  | 02 | Explain the effect of noise & vibration on miners & mine structures & other surface structure with respect to statutory provision. |
|                  | 03 | Explain the effect of noise & vibration on miners & mine structures & other surface structure with respect to statutory provision. |
|                  | 04 | Explain the effect of noise & vibration on miners & mine structures & other surface structure with respect to statutory provision. |
| 13 <sup>th</sup> | 01 | Explain the effect of noise & vibration on miners & mine structures & other surface structure with respect to statutory provision. |
|                  | 02 | Explain the effect of noise & vibration on miners & mine structures & other surface structure with respect to statutory provision. |
|                  | 03 | Proto-IV, Proto-V, Drager BG-174, Self rescuer, Smoke helmet, Gas mask.  |
|                  | 04 | Proto-IV, Proto-V, Drager BG-174, Self rescuer, Smoke helmet, Gas mask.  |

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| 14 <sup>th</sup> | 01 | Proto-IV, Proto-V, Drager BG-174, Self rescuer, Smoke helmet, Gas mask.         |
|                  | 02 | Construction of Rescue brigade and their role in rescue and recovery operation. |
|                  | 03 | Construction of Rescue brigade and their role in rescue and recovery operation. |
|                  | 04 | Mine Rescue rules 1985 Annexure I,II,III.                                       |
| 15 <sup>th</sup> | 01 | Mine Rescue rules 1985 Annexure I,II,III.                                       |
|                  | 02 | Mine Rescue rules 1985 Annexure I,II,III.                                       |
|                  | 03 | Mine Rescue rules 1985 Annexure I,II,III.                                       |
|                  | 04 | Mine Rescue rules 1985 Annexure I,II,III.                                       |

  
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