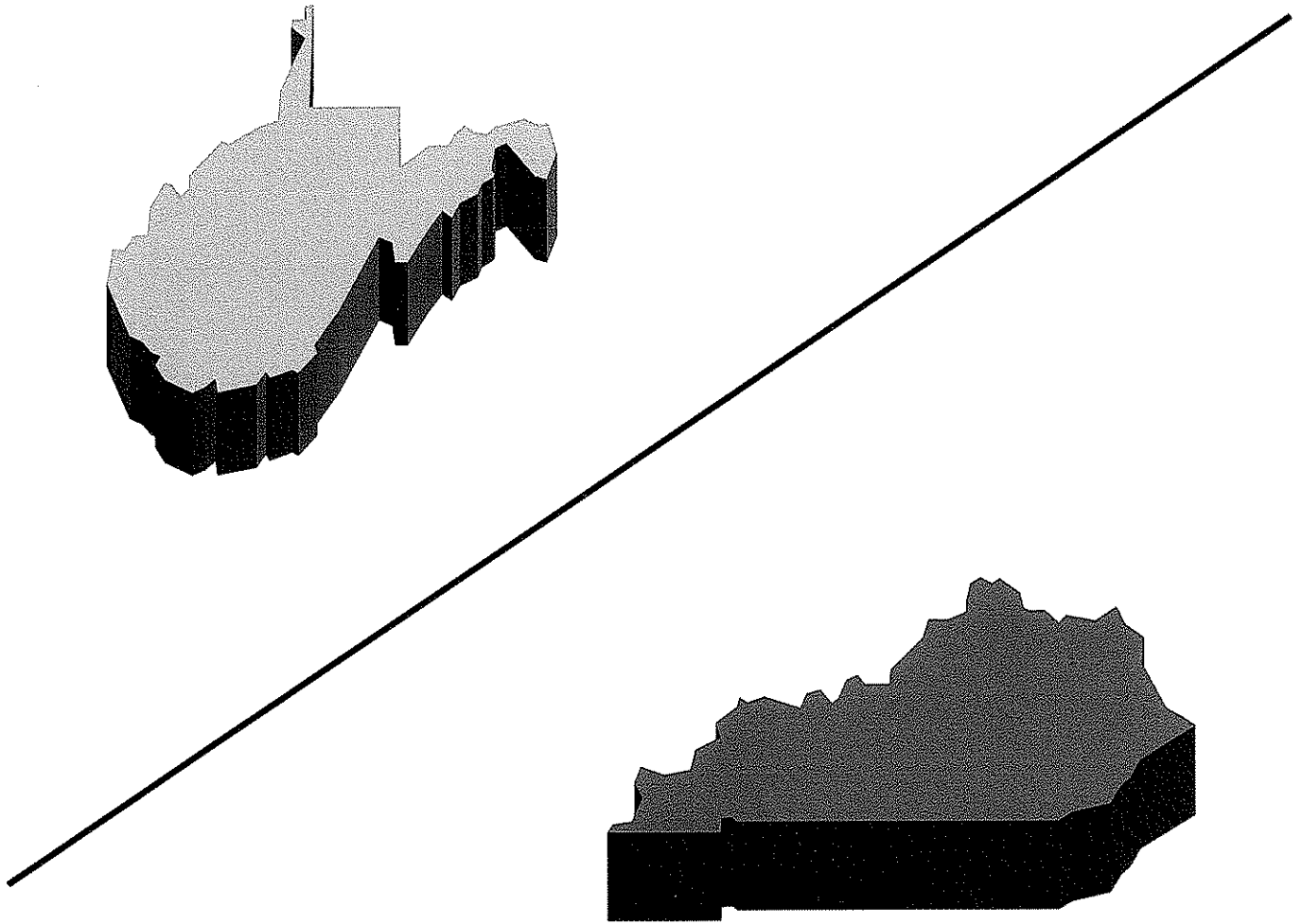


# RECIPROCITY STUDY GUIDE



## UNDERGROUND MINE FOREMAN

1. What refresher first-aid training is required of each coal mine employee in West Virginia?
  - a. Not less than 5 hours within each 24 months of employment
  - b. 40 hours per year
  - c. 8 hours per month
  - d. West Virginia coal miners are not required to have first-aid training
  
2. What scale is required on mine maps in West Virginia?
  - a. Not less than 100 feet to the inch, nor more than 500 feet to the inch
  - b. 100 feet to 400 feet per inch
  - c. Not more than 1,000 feet per inch
  - d. Not more than 2,500 feet per inch
  
3. How often must state mine inspectors conduct complete inspections of every underground coal mine in West Virginia?
  - a. At least once annually
  - b. At least twice annually
  - c. At least 3 times annually
  - d. At least 4 times annually
  
4. What shall be the minimum length of a new blasting cable used underground?
  - a. 25 feet
  - b. 50 feet
  - c. 75 feet
  - d. 125 feet
  
5. At what maximum interval shall shelter holes be developed in track haulage entries, except when variances are granted?
  - a. 100 feet
  - b. 200 feet
  - c. 300 feet
  - d. 400 feet
  
6. Who has the primary responsibility to prevent injuries and deaths resulting from working under unsupported roof?
  - a. The section foreman
  - b. The representative of the miners
  - c. The shift foreman
  - d. The operator

7. Prior to continuing mining operations, what minimum quantity of air is required to be delivered to the intake end of a pillar line when its bleeder return has been closed as a result of roof falls or water during pillar recovery operations?
  - a. 3,000 CFM
  - b. 6,000 CFM
  - c. 9,000 CFM
  - d. 20,000 CFM
  
8. What is required to protect all 120VAC 15 - 20 AMP circuits used to power portable hand tools used in wet locations at preparation plants, at the surface areas of underground mines, and at shop areas?
  - a. Check out switches
  - b. Yield current reducers
  - c. Ground fault circuit interrupting devices (GFCI)
  - d. Spring loaded switches
  
9. What fire-fighting equipment is required to be shown on a map of the mine which must be kept available at all times at the mine office?
  - a. The location of the pipelines, valves, and fire taps
  - b. Fire hydrants
  - c. The closest fire departments
  - d. None
  
10. Who is permitted to make the required daily examination of all main fans and machinery connected therewith?
  - a. A certified electrician or a competent person
  - b. The mine manager
  - c. The dispatcher
  - d. The top person
  
11. What length of time is an individual miner given to notify the operator in writing that he has obtained any additional mining certification (shot firer, belt examiner, mine foreman ...)?
  - a. 1 month
  - b. 2 months
  - c. 3 months
  - d. 4 days

12. How must all manually operated valves and levers on equipment of the same manufacturer and model activate and operate?
  - a. In opposite directions
  - b. In the same direction
  - c. Randomly
  - d. Intermittently
  
13. What must be used to tow disabled underground rubber-tired mining equipment in all areas of the mine outby working sections?
  - a. A tow truck
  - b. A diesel-powered tractor
  - c. A battery motor
  - d. A solid triangular tow bar
  
14. How many years of practical underground mining experience is required to qualify for an assistant mine foreman-fireboss certificate?
  - a. 1
  - b. 2
  - c. 3
  - d. 5
  
15. Who is permitted to conduct the required daily inspection of hoisting machinery at shaft mines?
  - a. The shift foreman
  - b. The department of weights and measures
  - c. A certified electrician
  - d. The dispatcher
  
16. At what intervals must stop and start controls be installed on belt conveyors that do not transport miners?
  - a. Not to exceed 1,000 feet
  - b. Every 200 feet
  - c. Every 300 feet
  - d. Every 2,000 feet

17. When may shelter holes be located on the trolley and feeder wire side?
- When the trolley wire and feeder wire are guarded in a manner approved by the director
  - Sometimes
  - Never
  - Occasionally
18. Who must directly supervise the handling of a misfired shot?
- An electrician
  - An apprentice electrician
  - The maintenance supervisor
  - The mine foreman or a certified person designated by him
19. What safety device is required for methane detectors on each working section other than longwall sections and sections mined solely by continuous mining machines with integral roof bolters?
- A probe or probes for lessening exposure to unsupported roof while making methane examinations
  - A hood
  - A gasket
  - None
20. When may the director require modifications to an existing comprehensive mine safety program?
- At any time following the investigation of a fatal accident
  - At any time following the investigation of a serious accident
  - During his review of the annual report
  - All of the above
21. What inspection is required of all belt conveyors following the last production shift each week and before holidays and vacation periods?
- None
  - A pre-shift examination
  - An on-shift examination
  - An examination for frozen rollers and fire hazards

22. What board establishes criteria and standards relative to programs of education, training, and examination of prospective coal miners in West Virginia?
- The board of miner training, education and certification
  - The board of public health
  - The board of public employees
  - The board of mining engineers
23. How may mine rescue coverage be provided at coal mines in West Virginia?
- By establishing at least 2 mine rescue teams which are available at all times when miners are underground
  - By entering into an arrangement for mine rescue services which assure that at least 2 mine rescue teams are available at an times when miners are underground
  - Either of the above
  - Mine rescue coverage is not required at West Virginia coal mines
24. What board is charged with the responsibilities of hearing appeals and making determinations on questions of miners' entitlements due to withdrawal orders and appeals from discharge or discrimination, and suspensions of certifications?
- The board of mines, minerals and energy
  - The coal mine safety and technical review committee
  - The board of appeals
  - The board of labor
25. What civil penalty may any miner in West Virginia be subject to when knowingly violating an health or safety provision of the state code or code of state rules?
- An IPA (Individual Personal Assessment) of \$25.00 to \$250.00 for each occurrence
  - None
  - A failure to abate order
  - An imminent danger order
26. Where shall a supply of supplementary roof support materials and the tools and equipment necessary to install the materials (in the event of an accident involving a roof fall or to support the roof if adverse conditions are encountered) be located?
- At a readily accessible location on each working section
  - Within 4 crosscuts of each working section
  - Either of the above
  - There is no such requirement

27. On track haulage roads, what continuous unobstructed clearance is required to be maintained on the clearance side?
- 6 inches
  - 12 inches
  - At least 24 inches from the farthest projection of any moving equipment
  - 6 feet
28. When is a dispatcher required?
- Dispatchers are not required at West Virginia coal mines
  - At the operator's discretion
  - When more than 350 tons of coal are produced on any shift in each 24 hour period
  - Federal law requires dispatchers at every West Virginia coal mine
29. What minimum quantity of air is required in the last open crosscut when crosscuts are being driven 105 feet apart or less?
- 3,000 CfM
  - 6,000 CfM
  - 9,000 CfM
  - 12,000 CfM
30. What minimum quantity of air is required to be delivered to the intake end of a pillar line?
- 3,000 CfM
  - 6,000 CfM
  - 9,000 CfM
  - 15,000 CfM
31. In what type of escapeway must a continuous lifeline be installed?
- Return airway entries designated as escapeways
  - Intake
  - Neutral
  - Secondary
32. What fire-fighting equipment is required to be provided at each permanent electrical installation?
- 2 portable fire extinguishers
  - 240 pounds of rock dust
  - 240 pounds of sand
  - None of the above

33. When are emergency medical technicians required to be employed in West Virginia coal mines?
- When the mine employs more than 10 people and more than 8 persons are present on the shift
  - When more than 5 people work at the mine in each 24 hour period
  - EMT's are not required in West Virginia mines
  - Paramedics are required in West Virginia mines - not EMT's
34. At what maximum intervals are manddoors required to be installed in the intake and return stopping lines when the height of the coal is below 48 inches?
- 300 feet
  - 400 feet
  - 500 feet
  - 600 feet
35. At what intervals must fire hose outlets with valves be installed in waterlines paralleling belt conveyors?
- Every 300 feet and at each tailpiece
  - Every 500 feet
  - Every 1,000 feet
  - As per stipulations in the approved roof control plan
36. What must be installed in the boom and head lift cylinders of all continuous mining machines and loading machines?
- Solenoid valves
  - Yield valves
  - Load-locking valves
  - Relief valves
37. When requested by an authorized representative of the director, how long does the mine operator, or agent thereof, have to furnish the required list of all mining certifications of all current employees on the payroll?
- 5 days
  - 60 days
  - 3 months
  - 6 months



38. What must be done when an undervoltage indicator on a unit of battery powered equipment indicates that 75% of the rated capacity of the unit's batteries has been expended?
- a. Undervoltage indicators are not required on battery powered equipment
  - b. Nothing
  - c. Tag it out
  - d. Withdraw the equipment from use except to tram it to the recharging station
39. What board is responsible for promulgating rules in response to coal mining related fatalities?
- a. The board of fatalities
  - b. The board of investigations
  - c. The board of examiners
  - d. The board of coal mine health and safety
40. How many years of practical underground mining experience is required to qualify for a belt examiner certification?
- a. 2
  - b. 4
  - c. 5
  - d. 6
41. What site specific program is required by law to be developed and submitted by each coal operator or independent contractor to address health and safety concerns regarding the extraction, production, processing, and/or preparation activities conducted by the coal operator or independent contractor?
- a. A roof control plan
  - b. A ventilation plan
  - c. A comprehensive mine safety program
  - d. No such requirement exists
42. What types of switches must all underground belt conveyors be equipped with?
- a. Slippage and sequence
  - b. Sensor and remote
  - c. Solenoid and centrifugal
  - d. Gravity and mercury

43. How far must a detonator magazine be located from an explosives magazine underground?
- a. Not less than 5 feet
  - b. 10 feet
  - c. 15 feet
  - d. 50 feet
44. What must be installed at each main and secondary belt conveyor drive underground?
- a. Deluge type water sprays
  - b. Water sprinklers or heat-activated foam generators
  - c. Dry chemical sprinkler systems
  - d. Any of the above
45. What dimensional requirements apply to manddoors installed in intake and return stopping lines?
- a. 30 square inches
  - b. They must be at least 30 inches square or the height of the coal seam if the seam is lower than 30 inches
  - c. 48 square inches
  - d. There are no dimensional requirements
46. How must the operating switch be constructed on electric drills or other electrically operated rotating tools intended to be held in the hand?
- a. Continuously
  - b. Out of metal
  - c. So as to break the circuit when the hand releases the switch
  - d. So that polarity can be reversed according to hand pressure
47. Out of what material must all run through check curtains be substantially constructed?
- a. Conveyor belting material
  - b. Polypropylene material
  - c. Translucent material
  - d. Readily available material

48. When must an employee wear a seat belt while operating a vehicle on the surface areas of an underground mine?
- When there is danger of overturning
  - When the vehicle is equipped with rollover protection
  - When the vehicle is rated at 5 ton or greater
  - All of the above
49. When must an onshift examination be conducted of all underground construction and rehabilitation work areas while persons are working at such locations?
- Anytime during the shift
  - Within 3 hours prior to the oncoming shift
  - Between the 3<sup>rd</sup> and 5<sup>th</sup> hours
  - Onshift examinations are not required in such areas
50. If a person's first class mine foreman certification has been revoked in Virginia, what mining certifications would that person be eligible for in West Virginia?
- None
  - Any certification except mine foreman
  - Only certifications that do not require statutory examinations
  - West Virginia law does not address this issue
51. What board is responsible for examining and certifying potential coal miners as potential coal mine inspectors in West Virginia?
- The board of public employees
  - The board of mining engineers
  - The mine inspectors' examining board
  - The board of industrial hygienists
52. Within what length of time must the occurrence of an injury that is not life-threatening be reported to the office of miners' health, safety and training?
- Within 10 working days
  - Within 8 hours
  - Within 1 month
  - Whenever the operator gets around to it
53. What board is charged with the responsibility of formulating appropriate rules and practices to improve health and safety and provide increased protection of miners?
- The board of formulation
  - The board of rules and practices
  - The board of coal mine health and safety
  - The board of appeals

54. How far apart may crosscuts for air be driven on remote controlled deep cut mining sections?
- a. 80 feet
  - b. 100 feet
  - c. 105 feet
  - d. 120 feet
55. Within what maximum distance from the nearest working face must the end of the track be maintained when the transportation of personnel is exclusively by rail?
- a. 50 feet
  - b. 100 feet
  - c. 500 feet
  - d. 1,000 feet
56. What minimum quantity of air is required in the last open crosscut when crosscuts are being driven more than 105 feet apart?
- a. The same quantity as required when the crosscuts are being driven less than 105 feet apart
  - b. 3,000CFM
  - c. 6,000 CFM
  - d. 12,000 CFM
57. What minimum clearance must be provided on both sides of all belt conveyors?
- a. 6"
  - b. 12"
  - c. 24"
  - d. 36"
58. When are underground miners required to wear metatarsal boots?
- a. There is no such requirement
  - b. When the average seam height exceeds 48 inches
  - c. Metatarsal boots are optional
  - d. When required by the mine committee

59. What fire-fighting equipment is required to be provided at each temporary electrical installation?
- 1 portable fire extinguisher and 240 pounds of rock dust
  - 1 bag of rock dust and 1 fire extinguisher
  - 1 bag of sand and 1 fire extinguisher
  - Any of the above
60. What must be done when the ventilation of a mine is interrupted for more than 15 minutes?
- All underground employees must be removed from the mine, the power shall be cut off in a timely manner, and no underground employees shall be permitted to return until ventilation is restored and the mine is examined by persons holding a certificate to make preshift examinations.
  - Withdraw from the faces until the order to evacuate is given
  - Keep on mining until methane is detected at 1% or more
  - Switch over to natural ventilation
61. Which of the following are required on roof bolting machines used in seam heights 48 inches or higher?
- An atmospheric monitoring system
  - A lifting jack and handle
  - A mechanical means of holding the drill steel during drilling operations
  - An airbag
62. What must be maintained on all self-propelled section equipment to assist equipment operators in making the required preshift inspections of such equipment for safety defects and/or unsafe conditions?
- A computer
  - A pre-operational equipment check list
  - A dynamometer
  - Infrared goggles
63. Who is required to examine the roadway to be traveled prior to operating section haulage equipment?
- None
  - The roadway examiner
  - The equipment operator
  - The belt examiner

64. How many open, unsupported adjacent crosscuts are permitted in direct line with one another on remote controlled deep cut mining sections?
- a. 10
  - b. 8
  - c. All of them
  - d. No more than 2
65. How often must each coal operator or independent contractor submit to the director a report containing the findings of the required evaluation of the effectiveness of the comprehensive mine safety program in effect at his or her operation?
- a. Monthly
  - b. Annually
  - c. Weekly
  - d. Every 5 years
66. How far from the working faces must boxes or magazines of explosives or detonators be kept?
- a. 15 feet
  - b. 25 feet
  - c. 100 feet and out of the direct line of blasting
  - d. 50 feet
67. What distance from mine openings, occupied buildings, and public roads must surface blasting magazines be located (unless barricaded)?
- a. 100 feet
  - b. 300 feet
  - c. 400 feet
  - d. 1,000 feet
68. Within what distance of a check curtain or fly curtain must mining equipment not be parked?
- a. There is no such requirement
  - b. 25 feet
  - c. 20 feet
  - d. 15 feet

69. How many oxygen and acetylene cylinders or tanks are permitted underground at anyone time?
- No more than are necessary to perform the work safely
  - 10
  - 15
  - 20
70. When is a mine foreman - fireboss required to be employed at an underground mine?
- Where 3 or more persons are employed in a 24 hour period
  - Where 5 or more persons are employed in a 24 hour period
  - Where 2 or more persons are employed in a 24 hour period
  - Always
71. What is medium voltage?
- Any voltage less than 1,000 volts
  - Any voltage more than 660 volts
  - From 661 to 1,000 volts
  - None of the above
72. What must be done before electrical changes are made to permissible equipment for use in a mine?
- The manufacturer must be consulted
  - Such changes must be approved by the director
  - Nothing
  - The proposed changes must be reviewed by the department of commerce
73. How long must an apprentice miner work before testing for a certificate of competency and qualification as an experienced coal miner?
- 1 week
  - 10 days
  - 1 month
  - 6 months with a minimum of 108 shifts
74. What is required prior to opening or reopening any coal mine in West Virginia?
- A permit of approval from the director
  - A certificate of competency and solvency
  - A prospecting permit
  - Approval from the mine workers' union

75. Within what length of time must the occurrence of a life-threatening injury be reported in writing to the office of miners' health, safety and training?
- a. Within 10 working days
  - b. Within 24 hours
  - c. Within 24 days
  - d. Within 10 months
76. How often *must* authorized representatives of the director review the effectiveness of approved roof control plans in *West Virginia*?
- a. At least every 6 months
  - b. At least every 6 years
  - c. Weekly
  - d. Monthly
77. How far may a working place be advanced in by a projected *crosscut* on a remote controlled deep cut mining section prior to mining the *crosscut* through?
- a. 10 feet
  - b. 20 feet
  - c. 30 feet
  - d. 50 feet
78. When are persons allowed to be located in by equipment being trammed or transported underground in the ventilating split passing over such equipment (other than ordinary sectional movements)?
- a. Never
  - b. Sometimes
  - c. When at least 12 inches of clearance can be maintained between the equipment move and the energized trolley wire
  - d. Occasionally
79. How often must the mine foreman carefully read and countersign all fireboss reports?
- a. Each shift
  - b. Daily
  - c. Weekly
  - d. Monthly



80. What minimum quantity of air is required to ventilate all working faces in a working section?
- a. 1,000CFM
  - b. 2,000CFM
  - c. 3,000 CFM
  - d. 4,000 CFM
81. When must a preshift examination be made of a belt conveyor and belt conveyor entry?
- a. Whenever an onshift examination has not been made during the preceding shift
  - b. Each shift
  - c. Daily
  - d. Weekly
82. How often is the operator required to conduct searches for smoker's articles?
- a. At frequent intervals
  - b. Daily
  - c. Weekly
  - d. Monthly
83. How often must fire drills and demonstrations of the various types of available fire-fighting equipment be held for employees?
- a. Weekly
  - b. Monthly
  - c. Annually
  - d. At least every 6 months
84. What action must be taken by the mine operator, or the operator's management personnel, when the ventilation fan becomes disabled or inoperative?
- a. None
  - b. Immediate action to cut off the power and withdraw the men from the face regions or other areas of the mine affected
  - c. Immediate evacuation of the mine
  - d. Start repairs to the fan immediately

85. At what maximum intervals are manddoors required to be installed in the intake and return stopping lines when the height of the coal is above 48 inches?
- a. 300 feet
  - b. 400 feet
  - c. 500 feet
  - d. 600 feet
86. Where shall cutout switches be installed in trolley wires and trolley feeder wires?
- a. Near the beginning of all branch lines and at intervals of not more than 2,000 feet
  - b. Every 1,000 feet
  - c. Every 1,500 feet
  - d. Every 2,500 feet
87. At what intervals must fire hose outlets with valves be installed in track haulage entries when two portable water cars are not provided?
- a. Every 300 feet and at the end of each track
  - b. Every 500 feet
  - c. Every 1,000 feet
  - d. As per stipulations in the approved roof control plan
88. What maximum distance from a splice in a trolley wire must trolley wire hangers be installed?
- a. Within 3 feet
  - b. Within 6 feet
  - c. Within 10 feet
  - d. Within 12 feet
89. What must all track haulage cars be provided with when they are regularly coupled and uncoupled?
- a. Load leveling struts
  - b. floating trucks
  - c. Automatic couplers
  - d. Back up sensors
90. What type of track mounted equipment must be provided with a trolley pole swing limiter?
- a. All open type
  - b. All closed type
  - c. Alternative type
  - d. Elite type

91. How often must approved methane detectors be calibrated?
- a. Daily
  - b. Weekly
  - c. Monthly
  - d. At least every 30 calendar days
92. What is required to be stored within 800 feet of the working face at a specified location on each underground working section at all times when miners are working on such sections?
- a. First aid supplies
  - b. Supplementary roof support materials
  - c. An escape capsule
  - d. A 10 ton lifting jack compatible with the seam height or other equivalent lifting device in working condition
93. How many years of practical underground mining experience is required to qualify for a shot firer certification?
- a. 1
  - b. 2
  - c. 4
  - d. 6
94. What must be done before any person is permitted to perform any work within the confines of the cargo space of a crusher, feeder, or rotary breaker?
- a. Nothing in particular
  - b. It must be deenergized, locked out, and suitably tagged
  - c. All combustible material must be removed
  - d. Remote communications must be established
95. How many years of practical underground mining experience is required to qualify for a mine rescue team member certification?
- a. 1
  - b. 3
  - c. 5
  - d. 6

96. What work is permitted to be done while boreholes are being charged in a working place?
- a. None
  - b. Only work in connection with timbering and general safety
  - c. Roof bolting
  - d. Machine dusting
97. Which of the following applies to the operating controls of all battery powered mobile equipment?
- a. They must be of electro-hydraulic design
  - b. They must be clearly marked to distinguish the forward and reverse positions
  - c. They must be welded to the frame
  - d. They must chime when left on
98. What is low voltage?
- a. Up to and including 660 volts
  - b. 240 volts and below
  - c. 120 volts and below
  - d. None of the above
99. What must mechanically operated grinding wheels be equipped with?
- a. Safety washers
  - b. Substantial retaining hoods
  - c. Goggles (unless eye shields are used)
  - d. All of the above
100. What is high voltage?
- a. More than 1,000 volts
  - b. More than 550 volts
  - c. More than 660 volts
  - d. More than 1,500 volts

**UNDERGROUND MINE FOREMAN RECIPROCITY STUDY GUIDE**  
**Answer Key**

|       |       |       |       |        |
|-------|-------|-------|-------|--------|
| 1. A  | 21. D | 41. C | 61. C | 81. A  |
| 2. A  | 22. A | 42. A | 62. B | 82. A  |
| 3. D  | 23. C | 43. A | 63. C | 83. D  |
| 4. D  | 24. C | 44. D | 64. D | 84. B  |
| 5. A  | 25. A | 45. B | 65. B | 85. C  |
| 6. D  | 26. C | 46. C | 66. C | 86. A  |
| 7. D  | 27. C | 47. C | 67. A | 87. B  |
| 8. C  | 28. C | 48. D | 68. D | 88. A  |
| 9. A  | 29. C | 49. C | 69. A | 89. C  |
| 10. A | 30. C | 50. A | 70. B | 90. A  |
| 11. D | 31. A | 51. C | 71. C | 91. D  |
| 12. B | 32. A | 52. A | 72. B | 92. D  |
| 13. D | 33. A | 53. C | 73. D | 93. B  |
| 14. C | 34. A | 54. D | 74. A | 94. B  |
| 15. C | 35. A | 55. C | 75. B | 95. A  |
| 16. A | 36. C | 56. D | 76. A | 96. B  |
| 17. A | 37. A | 57. C | 77. D | 97. B  |
| 18. D | 38. D | 58. B | 78. A | 98. A  |
| 19. A | 39. D | 59. A | 79. B | 99. D  |
| 20. D | 40. A | 60. A | 80. C | 100. A |