

**Job role:** Roof Bolter

**Code :** MIN/N0417

| Sr. No | NOS Code  | PC Code | Question   | Option A  | Option B                                  | Option C                            | Option D  | Answer | Level-E/M/H |
|--------|-----------|---------|--|---|---|-------------------------------------|-----------|--------|-------------|
| 1      | MIN/N0449 | PC1     | What is roof bolting   | It is a type of steel support                   | It increases the strength of strata       | It is a type of rock reinforcement  | All three | D      | M           |
| 2      |           | PC1     | Theory of roof bolting   | Suspension                                      | Beam                                      | Key                                 | All three | D      | H           |
| 3      |           | PC2     | In beam theory   | Layers of thin roof rocks clamps together       | Immediate layer is held by stronger layer | both 'A' and 'B'                    | none      | A      | M           |
| 4      |           | PC2     | In suspension theory   | Immediate layer are held by stronger upper bolt | Bolt stitches layers                      | Both 'A' and 'B'                    | none      | A      | M           |
| 5      |           | PC2     | In key theory  | Fractured roof is keyed                         | Bolt reinforcement the layers             | layer is suspended with upper layer | all three | A      | M           |
| 6      |           | PC2     | Effect of bearing plate  | Prevents roof layer from sagging                | Creates upwards pressure                  | prevents grout coming out           | all three | D      | H           |
| 7      |           | PC2     | Cement grout bolt is   | Roof bolt with cement filled hole               | Cement injected in roof                   | cement filled in cracks             | none      | A      | E           |
| 8      |           | PC2     | Freshly exposed roof is  | Roof exposed after blasting in development      | Roof in depillaring Goaf                  | both 'A' and 'B'                    | none      | A      | M           |
| 9      |           | PC2     | W-strap is used  | To bind the layers                              | Supplements the roof bolts                | suspends the layer                  | all three | B      | M           |
| 10     |           | PC2     | Roof bolt is a type  | Positive support                                | Reinforcement type support                | both 'A' and 'B'                    | none      | B      | H           |
| 11     |           | PC2     | Distance between bolts in a row ,distance between row to row, distance of bolt from side is called | Hole pattern                                    | Hole design                               | both 'A' and 'B'                    | none      | A      | H           |
| 12     |           | PC2     | Bolt is installed  | Within 2 hours of roof exposer                  | Within 3 hours of roof exposer            | Immediately after roof exposer      | none      | C      | M           |
| 13     |           | PC2     | RMR is   | Rock Mass Rating                                | Rock Movement Rate                        | Rock Method Rating                  | none      | A      | E           |

|    |  |     |  |                    |                        |                          |                          |   |   |
|----|--|-----|--|--------------------|------------------------|--------------------------|--------------------------|---|---|
| 14 |  | PC2 | Cement used in roof bolting                                      | quick setting type | can set in watery hole | Delay setting            | any type                 | A | E |
| 15 |  | PC2 | Bearing plate is   | plane type         | dome shape             | both 'A' and 'B'         | any type                 | B | H |
| 16 |  | PC2 | The central holes should be.....in gallery                       | slanting           | vertical               | any direction            | all three                | B | M |
| 17 |  | PC2 | Side holes of both sides should be                               | vertical           | any direction          | slanting at an angle 45° | slanting at an angle 15° | C | M |
| 18 |  | PC2 | Hole die should be.....more than dia of steel rod/bolt           | 5mm                | 6mm                    | 3mm                      | 2mm                      | C | M |
| 19 |  | PC2 | Roof bolting with cement capsule should take load of.....in 30mm | 5 tonne            | 8 tonne                | 3 tonne                  | 10 tonne                 | C | M |
|    |  | PC2 | The load tested at interval of                                   | 30min              | 2hrs                   | 24hrs                    | all three                | D | M |
|    |  | PC2 | The load of.....in 2hours  | 5t                 | 8t                     | 3t                       | 10t                      | C | M |
|    |  | PC2 | The bolt should take load of.....tonne in 24 hours               | 8T                 | 8T-10T                 | 3T                       | 10T                      | A | E |
|    |  | PC3 | What percentage of bolt should be tested                         | 5%                 | 15.00%                 | 10%                      | 12%                      | C | M |
|    |  | PC3 | Length of roof bolt should not be less than                      | 2.0 mts            | 1.5 mts                | 2.5 mts                  | none of these            | B | M |
|    |  | PC3 | Bolt should be ..... Steel                                       | plain              | ribbed                 | both A and B             | none                     | B | M |
|    |  | PC3 | Threaded length of bolt should .....at DNE end                   | 200mm              | 100mm                  | 150mm                    | 250mm                    | C | M |
|    |  | PC3 | Thickness of bearing plate (minimum)                             | 5mm                | 8mm                    | 10mm                     | 2mm                      | B | M |
|    |  | PC3 | Size of bearing plate  | 200mmX200mm        | 100mmX100mm            | 150mmX150mm              | 250mmX250mm              | C | M |
|    |  | PC3 | Shape of tightening nut  | square             | hexagonal              | both A and B             | none                     | B | E |
|    |  | PC3 | Length of tightening nut   | 20mm               | 15mm                   | 30mm                     | 10mm                     | C | M |
|    |  | PC3 | Clearance of .....mm with rod                                    | 2.5mm              | 3mm                    | 5mm                      | none                     | B | M |

|   |                  |            |  |                                     |                                |  |                      |   |   |
|---|------------------|------------|--|-------------------------------------|--------------------------------|--|----------------------|---|---|
|   |                  | <b>PC3</b> | Roof bolt is called .....  | passive                             | neutral                        | active                                       | none                 | C | H |
|   |                  | <b>PC3</b> | What is anchorage testing  | Testing of cement capsule           | testing of bearing plate       | testing of nut                               | testing of anchorage | D | H |
|   |                  | <b>PC3</b> | Percentage of bolts selected   | In fixed pattern                    | in grid pattern                | randomly                                     | any method           | C | H |
|   |                  | <b>PC3</b> | Destructive testing is   | testing of bolt to 20 T             | testing of bold to load at 3 T | testing of bolt till it fail                 | none                 | C | M |
|   |                  | <b>PC3</b> | Percentage bolt tested for destructive testing   | 5%                                  | 10%                            | 1%   | 2%                   | C | M |
|   |                  | <b>PC3</b> | Testing of bolt is necessary.....  | Because to check bolt quality       | bearing plate quality          | because bolt fails without giving indication | none                 | C | H |
| 2 | <b>MIN/N0450</b> | <b>PC1</b> | Before starting roof bolting operation checking of.....done  | roof condition                      | Roof dressing                  | Temporary supporting                         | all three            | D | E |
|   |                  | <b>PC1</b> | Before starting drilling operation drillers should put on.....                                       | dust mask                           | hand gloves                    | goggles                                      | all three            | D | M |
|   |                  | <b>PC1</b> | Drilling should be   | dry drilling                        | wet drilling                   | both A and B                                 | none                 | B | M |
|   |                  | <b>PC1</b> | Water is used for .....  | cooling of drill bit                | dust controle                  | both A and B                                 | none                 | B | H |
|   |                  | <b>PC1</b> | For dust reduction   | drill bit should be of proper shape | drill bit should be sharp      | both A and B                                 | none                 | C | H |
|   |                  | <b>PC1</b> | Water supply should be started   | before drilling                     | after drilling                 | simultaneously                               | none                 | A | H |
|   |                  | <b>PC1</b> | Water supply and drilling operation should be preferably   | independent                         | intercoupled                   | any type                                     | none of these        | B | H |
|   |                  | <b>PC1</b> | Resign capsule are suitable in   | dry hole                            | watery hole                    | both dry and watery hole                     | none                 | C | H |
|   |                  | <b>PC1</b> | Resin grouted bolt takes....load than cement grouted bolting is.....than cement grouted roof bolting | less                                | equal                          | more   | any method           | C | M |

|  |  |             |   |                                |                         |                          |               |   |   |
|--|--|-------------|---|--------------------------------|-------------------------|--------------------------|---------------|---|---|
|  |  | <b>PC1</b>  | Resin take .....time set than cement grouted bolt   | more                           | less                    | equal                    | any method    | B | M |
|  |  | <b>PC1</b>  | Life of resin gouted roof bolting is .....than cement grouted roof bolting                      | lesser                         | equal                   | larger                   | none          | C | M |
|  |  | <b>PC3</b>  | RMR is less than 20 roof is considered  | strong                         | very poor               | good                     | none of these | B | M |
|  |  | <b>PC3</b>  | When RMR value is between 60 to 80 roof stability is  | poor                           | fail                    | very poor                | good          | D | M |
|  |  | <b>PC13</b> | Poor notion of roof is when RMR value is between  | 20 to40                        | 60 to 80                | less than 20             | 40 to 60      | A | M |
|  |  | <b>PC3</b>  | Method of support shall be designed on the basis of   | face progress                  | drilling                | RMR of roof              | none          | C | H |
|  |  | <b>PC3</b>  | Freshly exposed roof shall be supported immediately upon exposer                                | to load the coal               | to prevent roof sagging | both A and B             | none of these | B | H |
|  |  | <b>PC3</b>  | Roof bolt should be free of oil/grease to   | ensure proper gripping in hole | proper holding          | proper handling          | none          | A | H |
|  |  | <b>PC3</b>  | Roof bolt are installed as soon as possible after roof is exposed but not later than .....hours | 1                              | 3                       | 4                        | 2             | D | M |
|  |  | <b>PC4</b>  | Roof bolting is under the supervision of .....  | roof bolter                    | overman                 | manager of the mine      | any person    | B | E |
|  |  | <b>PC4</b>  | Pattern of roof bolting is based on.....  | scientific study               | system of work          | classification of strata | all three     | D | H |
|  |  | <b>PC4</b>  | Responsibility of framing strata control and monitoring plans                                   | owner                          | agent                   | manager                  | all three     | D | H |
|  |  | <b>PC4</b>  | Before starting the drilling operation operator should check                                    | water pressure                 | condition of machine    | drill bit sharpness      | all three     | D | E |

|    |                  |             |   |   |                                   |                                 |                  |   |   |
|----|------------------|-------------|---|---|-----------------------------------|---------------------------------|------------------|---|---|
|    |                  | <b>PC13</b> | Any defect noticed shall be informed to                               | overman                                   | fitter                            | foreman                         | all three        | D | E |
|    |                  | <b>PC12</b> | Person responsible for marking the hole position                      | overman                                   | survor                            | operator                        | all three        | D | H |
|    |                  | <b>PC12</b> | Person responsible to ensure place of drilling safe                   | mining sirdar                             | asst manager                      | overman                         | all three        | D | H |
|    |                  | <b>PC12</b> | If roof is not good what action taken before starting drilling        | Temporary support erected before drilling | drilling to continue              | mining sirdar should be present | none             | A | E |
|    |                  | <b>PC12</b> | In case of resin bolting roof bolter should ensure                    | holes are free from water                 | resin capsule is churned properly | both A and B                    | none             | B | M |
|    |                  | <b>PC12</b> | Roof bolter should place the machine on ....                          | solid floor                               | on debris                         | any floor                       | on platform      | A | M |
|    |                  | <b>PC12</b> | Proper placing of machine is responsibility of                        | driller helper                            | fitter                            | roof bolter                     | all three        | C | E |
|    |                  | <b>PC13</b> | Roof bolter should follow the .....provided by manager                | code of practice                          | safe operating procedure          | any written instruction         | all three        | D | E |
|    |                  |             | The proper drilling and quantity of bolting can be achieved by        | training on job                           | instruction                       | direction                       | none             | A | M |
|    |                  |             | At the end of shift roof bolter should record details in ....register | shift                                     | log book                          | overman                         | forman           | B | M |
| 71 | <b>MIN/N0901</b> |             | What is IME   | Initial medical examination               | Internal mining examination       | Internal medical examination    | None             | A | M |
| 72 |                  |             | What is PME   | Personal medical examination              | Periodical medical examination    | Periodical mining examination   | None             | B | M |
| 73 |                  |             | As per mine rule period of PME is.....                                | At every 5 year interval                  | At every 3yrs interval            | Every year                      | None             | A | M |
| 74 |                  |             | AS PER 11th NATIONAL CONFERENCE RECOMONDATION PME IS DONE             | At every 2 years                          | Every year                        | At every 5 years                | At every 3 years | D | H |

|    |  |            |   |  |                                 |  |                    |   |   |
|----|--|------------|---|--|---------------------------------|--|--------------------|---|---|
| 75 |  |            | What is notified disease  | Occupational disease                   | Industrial disease              | Disease notified by central government in official gazette | None               | C | H |
| 76 |  | <b>PC1</b> | Pneumoconiosis is a.....  | Notified disease                       | Industrial disease              | A kind of fever  | None               | A | E |
| 77 |  |            | Which of these are not notified disease   | Pneumoconiosis                         | Noise induced hearing loss      | Silicosis  | Skin disease       | D | M |
| 78 |  | <b>PC1</b> | Person detected containing pneumoconiosis should be   | Placed to work in non-dusty atmosphere | Continued to work at same place | Provided with dust mask                                    | None               | A | M |
| 79 |  | <b>PC1</b> | Pneumoconiosis occurs due to  | Coal dust                              | Water                           | Humidity   | High temperature   | A | E |
| 80 |  |            | Coal dust should not be more than .....mg/m <sup>3</sup> in air borne respirable dust where free silica present is less than 5% | 3                                      | 5                               | 2  | 1.5                | C | H |
| 81 |  | <b>PC1</b> | What is PPE   | Personal protective equipment          | Public private enterprise       | Personal protective equipment                              | None               | C | E |
| 82 |  |            | Which of these is not PPE   | Helmet                                 | Shoe                            | Gloves   | Reviving apparatus | D | H |
| 83 |  | <b>PC1</b> | What is SOP   | Safety of persons                      | Safe operating procedure        | Safety of people   | None               | B | E |
| 84 |  |            | What is COP   | Code of practice                       | Code of persons                 | Code of presentation                                       | None               | A | E |
| 85 |  | <b>PC4</b> | Accidents occur due to  | Unsafe act                             | Unsafe condition                | Unsafe procedure   | All three          | D | M |
| 86 |  |            | Fire requires these elements  | Oxygen                                 | Fuel                            | Heat   | All three          | D | H |
| 87 |  | <b>PC4</b> | Class A fire involves   | Carbonaceous solids                    | Inflammable liquids             | Combustible gases  | All three          | A | H |
| 88 |  |            | Solid carbonaceous material fire is dealt with  | Water                                  | Sand                            | Soda acid extinguisher                                     | All three          | D | H |
| 89 |  |            | Liquid combustible material fire is dealt with  | Soda acid type                         | Water                           | Form type  | None               | C | H |

|     |  |             |   |                    |                      |                                  |                    |   |   |
|-----|--|-------------|---|--------------------|----------------------|----------------------------------|--------------------|---|---|
| 90  |  | <b>PC5</b>  | (90)all type firefighting systems must be approved by   | DGMS               | Manager of mine      | Safety officer of mines          | Anyone these       | A | M |
| 91  |  |             | All firefighting system , equipment's materials shall be examined by competent person once in every | 3month             | 6month               | 2month                           | One month          | D | H |
| 92  |  | <b>PC8</b>  | What is misfire   | Blasting operation | Exploder failure     | Failure to explode entire charge | All three          | C | M |
| 93  |  |             | Misfire is due to   | Faulty operation   | Faulty exploder      | Bad quality detonator            | Any of these       | D | M |
| 94  |  | <b>PC9</b>  | Nitrous fumes are produced in blasting of   | NG EXP             | Ammonium nitrate exp | Any exp.                         | None               | A | H |
| 95  |  | <b>PC9</b>  | Nitrus fumes are tested by  | Methanometer       | Toximeter            | Hygrometer                       | Multi gas detector | D | H |
| 96  |  | <b>PC10</b> | Worker should not be allowed without appropriate ear protection in area of noise level              | 85dB(A) OR MORE    | 90dB(A) OR MORE      | 115dB(A) OR MORE                 | 140dB(A) OR MORE   | C | H |
| 97  |  | <b>PC10</b> | No worker should be allows an area where the level exceeds  | 90dB(A)            | 115dB(A)             | 140dB(A)                         | None               | C | H |
| 98  |  | <b>PC10</b> | Helmet are to be .....for use in mines  | DGMS APPROVED      | Any type             | Is marked                        | None               | A | M |
| 99  |  | <b>PC11</b> | Mining shoes should be provided at interval not more than.....months(as per cmr.2017)               | 1 YEAR             | 3MONTHS              | 6MONTHS                          | None of these      | C | E |
| 100 |  | <b>PC11</b> | Manufacturers safety instructions should be included while preparation of                           | SOP                | COP                  | MAINTANANCE SCHEDULE             | Any of these       | D | E |