CBCS SCHEME

USN | | | | | | | | | |

18MN56

Fifth Semester B.E. Degree Examination, July/August 2021
Mine Electrical Engineering

Time: 3 hrs. Max. Marks: 100

Note: *Answer any FIVE full questions.*

1 a. Describe the scope and importance of electrical engineer in mines. **(05 Marks)**
b. With a neat diagram, explain the parts of an electric drive. **(10 Marks)**
c. Write a note on choice of electric drive. **(05 Marks)**

2 a. Explain in detail the Indian electricity rules applicable to mining any ten. **(10 Marks)**
b. What are the technical advantages of Electric drive? **(05 Marks)**
c. Draw the neat sketch of winders in mines. **(05 Marks)**

3 a. Classify DC motors and explain in brief. **(10 Marks)**
b. Explain the types of electric braking of a DC shunt motor. **(10 Marks)**

4 a. Explain Armature and flux control method of speed control of DC shunt motor. **(10 Marks)**
b. Derive the Emf equation of a DC Generator. **(10 Marks)**

5 a. Explain the constructional features of slip ring and squirrel cage Induction motor. **(10 Marks)**
b. With neat sketch, explain the working principle of an alternator. **(10 Marks)**

6 a. With their usual notions, derive the EMF equation of an alternations **(10 Marks)**
b. Explain the methods speed control of induction motors. **(10 Marks)**

7 a. Explain the working of Air Blast circuit Breaker with a neat diagram. **(10 Marks)**
b. Differentiate underground and surface distribution with a single line diagram. **(10 Marks)**

8 a. List and explain types of motor enclosures in mines. **(10 Marks)**
b. Explain underground signaling in mines. **(10 Marks)**

9 a. Define the following terms used in illumination
i) Reflectance ii) Light iii) MHSCP iv) Glare v) Lumen. **(10 Marks)**
b. Write a note on Illumination design for mines. **(10 Marks)**

10 a. Discuss LED lighting giving the advantages over other types. **(10 Marks)**
b. State and explain the laws of illumination. **(10 Marks)**

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