USN ☐☐☐☐☐☐☐☐☐☐　　　　17MN35

Third Semester B.E. Degree Examination, Dec.2018/Jan.2019
Elements of Mining Engineering

Time: 3 hrs.　　　　　　　　　　　　　　　　　　Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1　a.　Explain the significance of mining industry in national economy and infrastructure building.
　　　　　　　　　　　　　　　　　　　　　　　　　　(10 Marks)
　　b.　Explain the stages in mine life cycles　　　　　　　**(10 Marks)**

OR

2　a.　Explain the Adit with their application, condition and method of working.　**(10 Marks)**
　　b.　Explain the shaft with their application, condition and method of working.　**(10 Marks)**

Module-2

3　a.　Explain the preliminary geo – technical investigation for a shaft sinking project.　**(10 Marks)**
　　b.　Explain the unit operation involved in shaft sinking.　**(10 Marks)**

OR

4　a.　Explain the piling method of shaft sinking.　　　　　**(10 Marks)**
　　b.　Explain the Freezing method of shaft sinking.　　　　**(10 Marks)**

Module-3

5　a.　Explain the drivages of cross cuts with burn cut pattern and explain the unit operation involved.　**(08 Marks)**
　　b.　It was proposed to drive a, drift of 3m × 3m dimension. Explain the process involved and calculate powder factor, OMS and density of rock to be 2.3 gm/cm^3 [By wedge cut pattern].　**(12 Marks)**

OR

6　a.　Explain the Alimak raises climber.　　　　　　　　**(10 Marks)**
　　b.　Explain the arrangement to be made for ventilation and lighting for a drift.　**(10 Marks)**

Module-4

7　a.　Explain the prop support with a neat sketch.　　　　**(08 Marks)**
　　b.　Explain the yielding supports with a neat sketch.　　**(12 Marks)**

OR

8　a.　Explain the roof bolting with a neat sketch.　　　　**(12 Marks)**
　　b.　Explain the systematic support rule.　　　　　　　**(08 Marks)**

Module-5

9　Explain the construction and working principle of Tunnel boring machine with their application, limitation and advantages, disadvantages.　**(20 Marks)**

OR

10　Explain the conventional method of driving a tunnel and also explain the transportation and drainages arrangement for a large tunnel.　**(20 Marks)**

* * * * *