November 2025
M.Sc.
Third Semester
CORE – 09
GEOLOGY
Course Code: MGLC 3.11
(Engineering Geology & Hydrogeology)

Total Mark: 70 *Pass Mark: 28*
Time: 3 hours

Answer five *questions, taking* one *from each unit.*

UNIT–I

1. Describe the engineering properties of rocks and explain their significance in engineering projects. 14

2. Write a note on each of the following: 7×2=14
   (a) Soil profile
   (b) Rock quality designation

UNIT–II

3. Explain the phenomenon of landslides and discuss the major causes of slope instability with suitable examples. 14

4. Write a note on each of the following: 7×2=14
   (a) Natures equilibrium
   (b) Reservoir induced seismicity

UNIT–III

5. Discuss the role of different geological formations as aquifers. Explain their types, characteristics, and significance in groundwater occurrence. 14

6. Write a note on each of the following: 7×2=14
   (a) Specific yield and specific retention
   (b) Hydraulic conductivity

UNIT–IV

7. Explain the principles of well hydraulics. Discuss the factors controlling the movement of groundwater into wells and the methods used to determine well yield 14

8. Write a note on each of the following: 7×2=14
   (a) Remote sensing methods in groundwater exploration
   (b) Seismic refraction methods in groundwater exploration

UNIT–V

9. Differentiate between water contamination and water pollution. Discuss their major sources and impacts on human health and the environment. 4+10=14

10. Write a note on each of the following: 7×2=14
    (a) Conjunctive uses of water
    (b) Groundwater provinces of India
