

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER M.TECH DEGREE EXAMINATION

Civil Engineering

(Geomechanics and Structures)

04 CE 7305 Rock Mechanics

Max. Marks : 60

Duration: 3 Hours

Part A

Answer all Questions
Each Question Carries 3 marks

1. What are the limitations of RQD rock mass classification method?
2. Explain how effect of creep is analysed using complete stress strain curve of rock
3. Explain Hoek and Brown Criterion
4. What is the role of lining in tunnels?
5. Write down IS 12070-1987 recommendations on rock foundation
6. Sketch different failure modes of foundations on rock
7. Explain the importance of shape of tunneling
8. Describe any two method of construction of tunnels

Part B

Each Question Carries 6 marks

9. Briefly explain Hydraulic fracturing test in rock

OR

10. Explain RMR rock classification in detail

11. Write a note about faults occurring in rock mass

OR

12. Write a note on Stress-Strain behavior of rock in compression

13. Explain Griffith theory of brittle strength

OR

14. Compare Coulomb Mohr and Coulomb Navier failure criterion

15. Write a short note on under ground excavation and subsidence

OR

16. Comment about stresses around openings

17. List out the type rock failure occurring in rock mass

OR

18. What are design requirements of foundation on rock?

19. Explain rock bolting with neat sketches

OR

20. What are the problems associated with tunneling?