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. Explain the index property of the rock 'porosity'.
2. Differentiate normal fault and reverse fault.
3. Explain Maximum Stress Theory.
4. Explain the importance of lining in tunnels.
5. What are the recommendations on rock foundations mentioned in IS 12070-1987?
6. How do you calculate the settlement in rocks?
7. What are the two methods of ventilation in tunnels?
8. What are rock reinforcements?

PART B

Each question carries 6 marks

9. Describe rock quality designation with figure.

OR

10. Explain the strength test used to determine the bearing capacity of rocks.
11. Explain the stress strain behavior of rocks in deviatoric compression.

OR

12. Write a short note on folds occurring in rock masses.
13. Explain Mohr Coulomb Failure criterion.

OR

14. Explain the elementary Rheological models.
15. Describe briefly the plastic behaviour around tunnels.

OR

16. Write a short note on stresses around a circular excavation.
17. Explain rock socketed piers with figure.

OR

18. Explain different modes of failure of rock foundation.
19. Explain any two methods of tunneling in hard rocks.

OR

20. What are the different ways to improve the slope stability in rocks?