M.E. First Semester (Civil Engg. (Geotechnical Engg.)) (Full Time) (C.G.S. - New)

13046 : Earth Dam Analysis and Design : 1 SFGE 5

P. Pages : 1 | AU - 3477

Time : Three Hours | Max. Marks : 80

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Notes :
1. All question carry equal marks.
2. Due credit will be given to neatness and adequate Dimensions.
3. Assume suitable date wherever necessary.
4. Diagrams and chemicals equations should be given wherever necessary.
5. Pertain the construction lines.
6. Illustrate your answer necessary with the help of neat sketches.
7. Discuss the reaction, mechanism wherever necessary.
8. Solve **any five** questions.
9. Use of pen Blue/Black ink/refill only for writing book.

1. a) State different type of earth dam and their adoptability at a given site. **8**

b) Discuss the causes of failure of earth dam. Also discuss its criteria for safe design. **8**

2. a) Explain flow net in an earthen dam constructed of an anisotropic soil. **8**

b) What methods of control of seepage through foundation are adopted? Compare these method critically. **8**

3. a) Discuss the factor in brief determining the thickness of core as well as location of core in an earth dam. **8**

b) What are the effect of seepage on earth dam? Discuss method of seepage control through body of dam. **8**

4. a) Explain the concept of "Construction pore pressure" How is it to be computed? Enumerate the critical stages of pore pressure development in an earth dam. **8**

b) Indicate with force diagram the differences in the following methods used in stability analysis **8**
i) Friction circle method ii) Taylors slice method
iii) Bishop method.

5. a) Explain the problem encounter when a fault site is considered for a dam and what defensive measures you would adopt for curbing them. **8**

b) Describe placement control in pervious zone of earth dam. **8**

6. a) Describe with a neat sketch any one instrument used for measurement of horizontal movement. State its location and interpretation of the collected data. **8**

b) Define "Quality control of earth dam. Discuss its necessity. How is it achieved to compaction of cohesive soil with reference to type of roller, its action, placement control of core and pervious zone materials. **8**

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