Total No. of Questions :8]

SEAT No. : ____

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M. E. (Civil) Water Resources and Environmental Engineering

DAM ENGINEERING

(2013 Pattern) (Semester - III) (601093)

Time : 3 Hours] ***[Max. Marks :50***

Instructions to the candidates:

1) ***Answer any FIVE questions.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Use of Calculator is allowed.***
5) ***Assume suitable data, if necessary.***

Q1) a) Explain design of concrete dams. **[4]**

b) Explain any one foundation treatments in gravity dams in detail. **[6]**

Q2) a) What are basic principles of dam design? Explain step by step procedure for design of earthen dam. **[7]**

b) Discuss stability analysis for sudden drawdown case in earthen dam. **[3]**

Q3) a) Explain any one theory for design of arch dam. **[7]**

b) State various forces acting on arch dam with neat sketch. **[3]**

Q4) a) Explain various types of rock fill dams and draw the sketch of one of them. **[6]**

b) What is buttress dam? Explain the classification of buttress dam. **[4]**

Q5) a) Explain straight drop spillway and ogee spillway. **[6]**

b) Explain side channel and siphon spillway. **[4]**

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Q6) a) Explain determination of settlement of earth dam embankments. **[6]**

b) Explain determination of settlement and lateral movements in dam. **[4]**

Q7) a) State objectives of Central Water Commission. **[4]**

b) Explain functioning of Global Water Partnership (GWP). **[6]**

Q8) a) How does global warming increased by large dams? **[6]**

b) What is the impact due to construction of dam on displacement and rehabilitation? **[4]**