

Total No. of Questions : 6]

SEAT No. :

P1

[Total No. of Pages : 2

APR-17/BE/Insem-1
B.E. (Civil Engineering)
DAMS AND HYDRAULIC STRUCTURES
(2012 Pattern) (Semester - II)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:-

- 1) *Solve Q.1 or Q.2, Q.3 or Q.4 and Q.5 or Q.6.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks to the sub-questions..*
- 4) *Assume suitable data if necessary and state it clearly.*
- 5) *Use of pocket size non-programmable calculator is allowed.*

UNIT-I

- Q1) a)** State two advantages and two disadvantages of vibrating wire piezometer and pneumatic piezometer. **[4]**
- b) Briefly explain six factors considered for selecting a site for dam. **[6]**

OR

- Q2) a)** Briefly explain following issues related to Dams: **[4]**
- i) Social issues,
 - ii) Climate / Environmental issues.
- b) Discuss clearly with minimum six examples : measurements taken, use of relevant instrumentation / instruments, and monitoring for safety of dams. **[6]**

UNIT-II

- Q3) a)** What is an 'Arch Dam'? State its two advantages and two drawbacks. **[3]**
- b) What is meant by roller compacted concrete gravity dam? Discuss the construction with roller compacted concrete and its properties. **[7]**

OR

P.T.O.

- Q4) a)** What is a Buttress dam? State its two advantages and two drawbacks. [3]
- b)** Fig. 1 shows profile of a gravity dam and water level in the reservoir. If specific weight of concrete used for the dam is 24 kN/m^3 and coefficient of friction is 0.70; check the safety of dam with respect to sliding. [7]

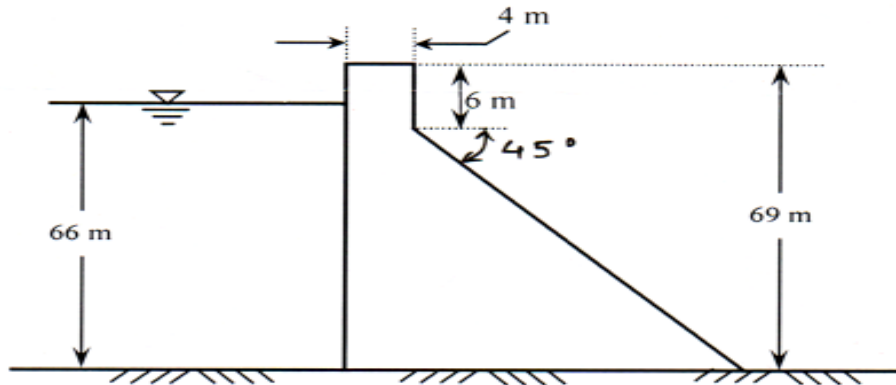


Fig. 1: Q. 4 (b)

UNIT-III

- Q5) a)** What is the necessity of following with reference to spillway Gates? [2+3]
- i) inspection, and
 - ii) maintenance

State six factors considered for the inspection of Vertical Gates.

- b)** Discuss 'assessment of power potential' of a Hydropower Plant. [5]

OR

- Q6) a)** Draw neat sketch of 'Vertical Drop Spillway'. Write three provisions (methods) to avoid erosion on the downstream side of this spillway. [2+3]
- b)** Explain following components of hydropower plants with relevant sketches : [5]
- i) Forebay, and
 - ii) Surge tank

