

Total No. of Questions : 6]

SEAT No. :

P1331

[Total No. of Pages : 2

**BE/Insem/APR-151**

**B.E. (Civil)**

**DAMS and Hydraulic Structures**

**(2015 Pattern) (Semester - II)**

*Time : 1 Hour]*

*[Max. Marks : 30*

*Instructions to the candidates:*

*Solve Q.1. or Q.2., Q.3. or Q.4., Q.5 or Q.6.*

**Q1) a)** Define & Explain the meaning of storage dam, diversion dams, overflow dams. [5]

b) Write different types of Instruments used to monitor dam at least four and explain any one. [5]

OR

**Q2) a)** Explain the factors which govern the selection of site for dam construction. [5]

b) What are the objectives of dam safety and instrumentation. [5]

**Q3) a)** Write short note on:  
Horizontal inertia force which force should be taken into consideration while designing the dam structure. [5]

b) What is meant by the best central angle of an arch dam & what is its value? [5]

OR

**Q4) a)** Write advantages of Buttress Dams. [5]

b) A 20m high concrete gravity dam has vertical upstream face and downstream face is inclined at  $45^\circ$ . The top and base widths are 2m and 20m. respectively. The free board is 2m. Take weight density of water as  $10\text{kN/m}^3$  & concrete  $24\text{kN/m}^2$ . Determine factor of safety against overturning. Consider full uplift. [5]

**P.T.O.**

- Q5)** a) Discuss the various types of energy dissipator used below spillway in relation to the position of tail water depth and jump height curve at least two with sketch. [5]
- b) State classification of spillway and purpose of its provision (4 types)[5]
- Q6)** a) State four types of spillway gates and explain any one with sketch. [5]
- b) Write design steps for Down stream crest of ogee spillway. [5]

