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SEAT No. :

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**P63**

**BE/Insem./APR-101**

**B.E. (Civil)**

**401007 : DAMS AND HYDRAULIC STRUCTURES**

**(2012 Pattern) (Semester - II)**

*Time : 1 Hour]*

*[Max. Marks : 30*

*Instructions to the candidates:*

- 1) Answer Q1 or 2, Q3 or 4, Q5 or 6.
- 2) Figures to the right indicate full marks.

**Q1) a)** Write short note on : **[5]**

- i) Dams & earthquakes
- ii) Displacement & Rehabilitation

b) Classify dams based on material use, purpose & Hydraulic action. **[5]**

OR

**Q2) a)** Write short note on : **[5]**

- i) Pendulum
- ii) Distributed fiber optic temp. tool.

b) Briefly explain any four instruments used for health monitoring of Dam. **[5]**

**Q3) a)** Explain in details any one forces causing instability of gravity dam. List any five causing instability of gravity dam. **[5]**

b) What is the limiting height of gravity Dam. **[5]**

OR

**Q4) a)** A 20 m high concrete gravity dam has vertical upstream face and down stream face is inclined at  $45^\circ$ . The top and base widths are 2 m and 20 m respectively. The free board is 2m. Take weight density of water as  $10 \text{ kN/m}^3$  & of concrete  $24 \text{ kN/m}^3$  Determine the factor of safety against overturning by neglecting earthquake and tail water. Consider full uplift. **[8]**

b) Define Arch Dam & Write two types of arch Dam. **[2]**

*P.T.O.*

- Q5)** a) State various types of spillway gates. At least five and its applications. [5]
- b) Draw a proportionate and neat sketches and explain function of each energy dessipator. [5]
- i) Roller Bucket
- ii) Ski jump bucket

OR

- Q6)** a) English Design steps of Ogee spillway from heel to toe and explain. [8]
- b) List four types of spillway. [2]

