

Total No. of Questions :4 ]

SEAT No. :

PA-10157

[6010]-26

[Total No. of Pages :2

**B.E. (Civil Engineering) (Insem)  
Dams & Hydraulics Structures  
(2019 Pattern) (Semester-VIII)(401011)**

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) Answer Q.1 or Q.2, Q.3 or Q.4.
- 2) Neat sketches/diagrams must be drawn wherever necessary.
- 3) Figures to the right side indicate full marks for the sub-questions.
- 4) Assume suitable data, if necessary and state them in your answer clearly.
- 5) Use non-programmable pocket size electronic calculator is allowed.

- Q1)** a) Define the term dam & state its purpose. [5]
- b) Explain the types of dams based on structural action and briefly explain any one type. [5]
- c) State & explain any two instruments used for various measurements needed to safety of dams. [5]

OR

- Q2)** a) What is an arch dam & state its advantages and disadvantages. [5]
- b) What are the objectives of dam safety instruments? [5]
- c) What are the factors that govern the selection of the site for a dam construction. [5]

- Q3)** a) Enlist forces acting on gravity dam & write their equation for any two forces acting on gravity dam. [5]
- b) What are the Modes of failure of gravity dam? Explain any two. [5]
- c) Enlist different methods of stability analysis of gravity dam & explain in brief any one of them. [5]

OR

- Q4)** a) Discuss various methods to reduce uplift pressure at the base of gravity dam. [5]
- b) Explain various joints provided in gravity dam. [5]

P.T.O.

- c) As shown in fig. 1 profile of gravity dam and water level in the reservoir. If specific weight of concrete used for the dam is  $24 \text{ kN/m}^3$  & coefficient of friction is 0.70, total self weight of dam is  $54 \times 10^3 \text{ kN/m}$ . check the safety of dam with respect to sliding. [5]

