## 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.T or Q.2 Q. 3 or Q.4.
2) Neat sketches/diagkams must be drawn wherever necessary.
3) Figures to the right side indicate full marks for the sub-questions.
4) Asswie) suitdble 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.
b) Explain the types of dams based onstructural action and briefly explain , any one type.
c) State \& explain any two instraments used for various measurements needed to safety of dams.

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

Q3) a) Enlist forces actingon gravity dam \& write their equation for any two forces acting on gravity dam.
b) What are the Modes of failure of gravity dam? Explain anyttwo.
c) Enlist different methods of stability analysis of grayity dapn \& explain in brief any one of them.

Q4) a) Discuss various methods to reduce uplift pressure at the base of gravity dam.
b) Explain various joints provided in gravity dam.
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 $24 \mathrm{kN} / \mathrm{m}^{3} \&$ coefficient of friction is 0.70 , total self weight of dam is $54 \times 10^{3} \mathrm{kN} / \mathrm{m}$. check the safety of dam with respect to sfiding.


