The Assam Royal Global University, Guwahati

Royal School of Architecture
Theory of Structures III, 3rd Semester
Mid Semester Examination, Oct-2018
Course Title: Theory of Structures III

Course Code: ARC132G306
Time: 1 Hour   Maximum Marks: 20

Attempt all the questions

Question No. 1 (Answer Any Two)   5 x 2
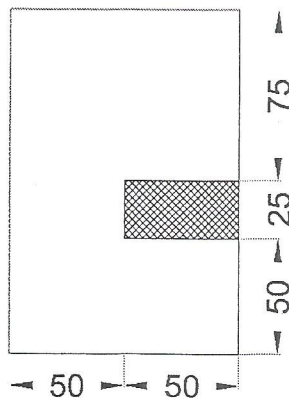
a. Write the assumptions of Pure Bending Theory.   5

b. Derive the Flexure Formula under Pure Bending with neat sketches.   5

c. Find the maximum moment carrying capacity of a hollow circular section having external diameter 200 mm, thickness 20 mm and permissible stress 180 MPa.   5

Question No. 2 (Answer Any Two)   5 x 2

a. Describe the conditions of stability of dams with neat sketches.   5

b. Describe the following properties of a material with diagrams and/or plots: 5

  i.   Elastic Limit
  ii.   Brittle Material
  iii.   Plasticity
  iv.   Fatigue
  v.   Ultimate Strength

c. A beam with the cross-section given below is subjected to a positive bending moment (causing compression at the top) of 16 kN-m acting around the horizontal axis. The tensile force acting on the hatched area of the cross-section.   5