GOVERNMENT COLLEGE OF ENGIEERING AMRAVATI

(An Autonomous Institute of Government of Maharashtra)

Class test-II (Summer 2018)

Subject code and name: CEU 101 (Engineering Mechanics) **Maximum marks:** 15

Q.1 a) State and Explain with help of neat sketch **(3 marks)**

a) Angle of Repose

b) Plane motion

c) Perfect Truss

b) A force 300 N is required to just move a block up a plane inclined at 20^0 to the horizontal. The force is to be applied parallel to the plane. If the inclination of the plane is increased to 25^0, the force required to just move the block up is 340 N when the force acts parallel to the plane. Determine the weight of the block and the coefficient of the friction. **(4 marks)**

Q.2 a) Determine the forces in the member AB and AD of the truss shown in figure 1 by the method of section. **(4 marks)**

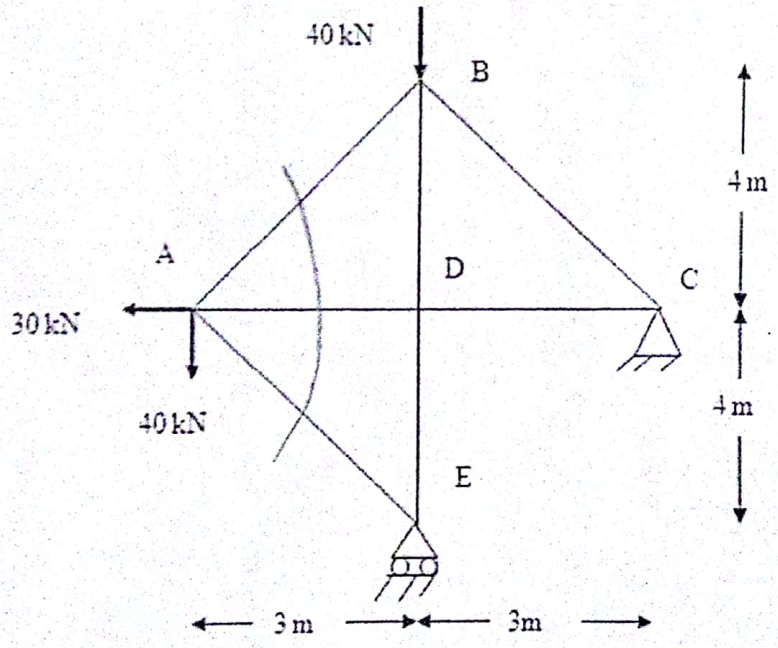

Figure 1

b) A stone is dropped from the top of a tower. During the last second of its flight, it is found to fall $1/4^{th}$ of the whole height of tower. Find the height of the tower. What is the velocity with which the stone hits the ground? **(4 marks)**

OR

c) Derive the expression for relationship between tension on tight side and slack side of weightless pulley. **(4 marks)**