EASTERN UNIVERSITY, SRI LANKA

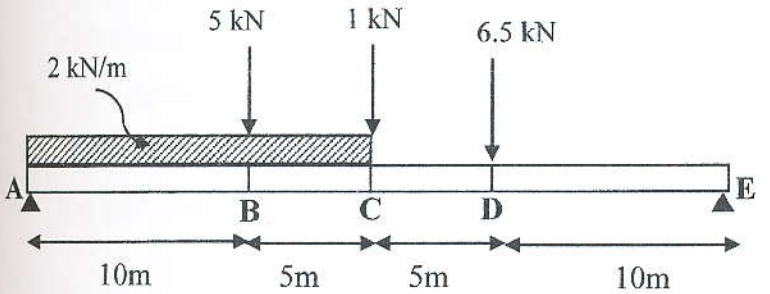
FIRST YEAR SECOND SEMESTER EXAMINATION IN AGRICULTURE-2016/2017

AE 1202 - APPLIED MECHANICS

Answer all questions
Time: **One hour**

---

01. A simply supported beam with point loads at B,C,D and a uniformly distributed load of 2kN/m from A to C is shown in the figure below.



(i) Draw the free body diagram of the above beam.
(ii) Find out the reactions at A and E.
(iii) Calculate the shear forces at points A, B, C, D and E and draw the shear force diagram.
(iv) Calculate the bending moments at points A, B, C, D and E and draw the bending moment diagram.

02. A steel wire of cross sectional area $3x10^{-6}m^2$ can withstand a maximum strain of $1x10^{-3}$. Young's modulus of steel is $2x10^{11}$ Nm^{-2}. What is the maximum mass that the wire can hold? (Take $g = 10$ ms^{-2})