EASTERN UNIVERSITY, SRI LANKA
FIRST YEAR FIRST SEMESTER EXAMINATION IN AGRICULTURE- 2009/10
(MAY/JUNE 2011)
AEN 1101 – FARM MECHANIZATION (2:20/20/20)

Answer all questions.
Time: Two hours

01. (a) What do you understand by the term multi cylinder operation?

(b) Write an account on the operation of a four stroke diesel engine.

02. (a) Briefly explain the structure and working principle of a simple dynamo.

(b) What are the major components of a power transmission system and state the function of each component.

03. (a) What is the basic difference between trailed and mounted types of implements?

(b) Prescribe a suitable primary tillage implement for hard dry soils and sticky soils and also briefly describe about it.

04. A four wheel tractor weighing 3000 kg has a draw bar force of 1620kg. It pulls a trial implement at a speed of 5 km/h on level ground. The centre of gravity of tractor is 80cm ahead of rear axle. The wheel base is 2.5m. The total contact area of the rear wheel is 1000cm^2. The point of hitch is located 40cm above the ground surface and 30cm behind the rear axle. Assuming the angle of internal friction as 20^0 and cohesion coefficient as 0.1 kg/cm^2, calculate,

(i) Angle of inclination of the line of pull

(ii) Soil reaction at rear and front wheels

(iii) Maximum pull if angle of inclination remains unchanged