

KERALA AGRICULTURAL UNIVERSITY
B.Sc. (Hons.) Agriculture – 2009 Admission - IInd Semester
Final Examination - August 2010

Cat. No. : Engg 1202

Title : Farm Power and Machinery (1+1)

Max. marks: 80

Time : 3 hours

I. Choose the correct answer

(10 x 1=10)

- (1). Define Scavenging?
- (2). Diesel engine has compression ratio ranging from to.....
- (3). Displacement volume of a 4 stroke engine is
- (4). Name the clutch used in Power Tiller?
- (5). Define rolling resistance?
- (6). Define firing interval?
- (7). What is meant by dead furrow?
- (8). Calorific value of HSD oil is
- (9). Define centre of resistance?
- (10). Define swept volume?

II. Write short notes / answers etc. on ANY TEN

(10 x 3 = 30)

- (1). Differentiate between vertical suction and horizontal suction?
- (2). Differentiate between Otto cycle and Diesel cycle?
- (3). What is the difference between Brake dynamometer and Drawbar dynamometer used on farms?
- (4). How forced feed system of lubrication works in an I.C. engine?
- (5). Describe the working of tractor drawn mounted type cultivator?

- (6). What are the factor affecting penetration of disc harrow?
- (7). What is the difference between trailed, semi-mounted and mounted implements?
- (8). What are the main components of a power tiller? Explain the working of tiller?
- (9). What are the main components of an I.C. engine? Compare diesel engine with spark ignition Engine?
- (10). Describe the working of Thermosiphon system of cooling?
- (11). How splash system of lubrication works in an I.C. engine?
- (12). How does detonation differ from pre-ignition?

III. Write short essays on ANY SIX of the following

(6 x 5 = 30)

- (1). How a standard disc plough differs with vertical disc plough? Describe the functions of different parts of a disc plough?
- (2). Explain the process of calibration of seed drill? Describe the working of paddy drum seeder?
- (3). What are the different types of sprayers? Describe the working of each sprayers?
- (4). How a spring loaded type cultivator differs with rigid tined cultivator in working? Describe with neat sketches?
- (5). What are the performance characteristics of tractor engines? Explain with the help of various curves?
- (6). What is the function of Differential in a tractor? Explain its working with the help of diagram?
- (7). What do you understand by proper registration and alignment? Explain the working of Self Propelled Harvester?
- (8). Explain the working of four stroke cycle engine with neat sketches?

IV. Write essay/answers on ANY ONE.

(1 x 10 = 10)

1. Explain different sources of farm power? Discuss the scope of farm mechanization in Kerala?
2. Describe the mechanics of Tractor Chasis? Explain different methods for finding Centre of Gravity of a Tractor? Explain the important test conditions of a Tractor?