

KERALA AGRICULTURAL UNIVERSITY

B.Tech (Agrl.Engg) 2013 Admission

IVth Semester Final Examination- June/July -2015

Cat. No: Fpme.2209

Title: Farm power (2+1)

Marks: 50

Time: 2 hours

I. Fill up the blanks

(10x1 = 10)

1. A bullock can develop a power of about _____ hp.
2. Thermal efficiency of a diesel engine varies from _____ to _____ %.
3. Wind speed less than _____ kmh^{-1} is not suitable to operate a wind mill on economical basis.
4. The secondary butterfly valve used to provide a richer mixture for the engine to start in cold condition is called _____.
5. The temperature at which the oil just flows under prescribed condition is known as _____.
6. _____ and _____ are the two types of spark plugs.
7. _____ is used for cooling the circulating water in the engine.
8. The top unworn portion of the engine liner is known as _____.
9. The state of battery charge is indicated by the _____ of electrolyte.
10. The limit of sulphur content in fuel is less than _____ % by weight.

II. Write short notes on any FIVE questions

(5 x 2=10)

1. Define biomass and give simple reaction equation in the biogas plant.
2. Differentiate constant speed governor and variable speed governor.
3. Sketch the ideal indicator diagram for a four stroke Otto cycle.
4. How does detonation differ from pre-ignition?
5. Sketch the P-V diagram for adiabatic expansion of a perfect gas.
6. What is gasoline additives?
7. Mention the two main requirements of an efficient cooling system.

III. Write short essays on any FIVE questions

(5 x 4=20)

1. Define valve timing diagram and neatly sketch the valve timing diagram of a 4-stroke engine.
2. Briefly explain any five fuel tests to determine its suitability for an IC engine.
3. Draw the pressure - time diagrams for a diesel engine having combustion chambers (a) open chamber, (b) Pre-combustion chamber (c) Swirl chamber and Air cell.

4. Sketch neatly the schematic diagram of battery ignition system.
5. What you understand by downdraft carburetor and updraft carburetor?
6. Find the weight of air for complete combustion of 10 litres of petrol, assuming air contains 22.7% oxygen.
7. Briefly explain the working of oil bath air cleaner with neat sketch.

IV. Write essay on ANY ONE

(1x10 = 10)

1. Compare 4-stroke and 2-stroke engines.
2. Explain the working of a 4-stroke cycle engine with neat sketch.