

KERALA AGRICULTURAL UNIVERSITY

B.Tech (Agrl.Engg.) 2015 Admission
IVth Semester Final Examination-July-2017

Cat. No: Fpme.2209

Title: Farm Power (2+1)

Marks: 50

Time: 2 hours

I Fill up the blanks/State True or False

(10x1=10)

1. Horsepower available at the crank shaft is -----
2. Stroke -Bore ratio of a square engine is -----
3. The thermal efficiency of a SI engine is -----than that of a CI engine.
4. Velocity of wind ----- with height.
5. Heating of gas at constant pressure is governed by -----law.
6. Firing order of a four stroke 4 cylinder engine is 1-3- 2-4.
7. IHP/BHP is always more than one.
8. A pressurized radiator cap helps to reduce the evaporation losses by decreasing the boiling temperature water.
9. There is one power stroke for each revolution of crank the shaft in a 4 stroke engine.
10. The volume of given mass of a gas-is inversely proportional to pressure at constant temperature.

II Write short notes/answers to any FIVE of the following

(5x2=10)

1. Specific fuel consumption of diesel engines
2. Define thermal efficiency of an engine. What are the causes of deviation from ideal cycle?
3. Anti freeze solution
4. Octane number
5. Adiabatic process
6. Entropy and enthalpy.
7. Necessity of cooling in IC engines

III Write short answers to any FIVE

(5x4=20)

1. Explain the laws of Thermodynamics.
2. Explain the valve timing of diesel engine with the help of a neat diagram.
3. Calculate the BHP of a 4-stroke 2 cylinder I C engine of 12.5×15 cm, $p = 7$ kg/cm², $N = 2000$ rpm and $\eta_m = 0.75$.
4. Explain the working of 2 stroke cycle diesel engine with neat sketches.
5. Explain the working of valve operating system in IC engines.
6. Explain in brief the different gasoline tests and their significance.
7. Explain with neat sketch, forced circulation method of cooling.

IV Write essay on any ONE

(1x10=10)

1. Explain the working of different types of air and liquid cooling systems used in IC engines with the help of neat sketches.
2. Explain the working of 4 stroke CI and SI engines with the help of neat sketches.
