

Code No: R1622356

**R16****SET - 1**

**II B. Tech II Semester Regular Examinations, April- 2018**  
**FARM POWER AND TRACTOR SYSTEMS**  
(Agricultural Engineering)

Time: 3 hours

Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)  
2. Answer **ALL** the question in **Part-A**  
3. Answer any **FOUR** Questions from **Part-B**

**PART -A**

1. a) Classify the I.C. engines (2M)
- b) Define IHP and write the equation to find the IHP of 2 and 4-stroke engines (3M)
- c) List out the purpose of lubrication system and explain about all (2M)
- d) Define governor regulation and write the equation for it (2M)
- e) Describe the types of gears are generally using in the agricultural machinery (2M)
- f) Describe briefly about traction theory (3M)

**PART -B**

2. a) List out the sources of farm power and explain briefly about all (7M)
- b) Describe the working principles of 4-stroke I.C. engine with proper line diagrams (7M)
3. a) Write the differences between the diesel engine and petrol engine (7M)
- b) Describe the valve timing diagram with appropriate diagram (7M)
4. a) Explain the working principle of tractor fuel supply system with neat line diagram (7M)
- b) Calculate the brake power of a 2 cylinder 4-stroke cycle I.C. engine 12 x 15 cm. The mean effective pressure is 700 kPa and speed of crankshaft is 1200 rpm. The mechanical efficiency is 75%. (7M)
5. a) List out the types of cooling system and explain briefly about forced circulation method with neat line diagram (7M)
- b) Draw the diagram of power transmission system and label the parts (7M)
6. a) List out the types of gear boxes generally used in the agricultural tractors and explain about selective sliding type of gear box with line diagram (7M)
- b) Describe the working principle of differential unit with neat line diagram (7M)
7. a) Classify the brake systems and explain briefly about internal expanding type brake system with proper line diagram (7M)
- b) Write about the tractor chassis (7M)