Code No: R1622356   **R16**   **SET - 1**

II B. Tech II Semester Supplementary Examinations, November - 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**
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PART –A

1. a) Classify the all agricultural tractors (2M)
   b) List out the components of I.C. engines (2M)
   c) Write about working of hydraulic dynamometer (3M)
   d) Define ratchet and pawl mechanism (2M)
   e) What is the necessity for providing the gear box in the tractors (3M)
   f) List out the components of hydraulic system of a tractor and expain about any two of them (2M)

PART -B

2. a) What are the sources of arm power and describe abut all sources (7M)
   b) Write the difference between the 2-stroke and 4- stroke engines (7M)

3. a) What are the qualities fuels and explain briefly about all qualities of fuels (7M)
   b) List out the components of tractor fuel supply system and explain about all the components of fuel supply system (7M)

4. a) List out the components of battery ignition system and explain in details about battery (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 clutches and describe the working principles of singe plate clutch with proper line diagram (7M)
   b) Draw the diagram of differential unit and label the parts (7M)

6. a) Describe the working principle of hydraulic brake system with neat line diagram (7M)
   b) What are the components of tractor steering system and explain about all the components of tractor steering system (7M)

7. a) List out the possible available methods to find out the centre of gravity of tractor and describe about all methods in details (7M)
   b) What are the essential tests of tractors and explain about all the tests in detail (7M)