

B TECH
(SEM IV) THEORY EXAMINATION 2018-19
FARM POWER

Time: 3 Hours**Total Marks: 100****Note:** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A**

- 1. Attempt all questions in brief. 2 x 10 = 20**
- a. Discuss the purpose of lubrication theory in brief.
 - b. What is the basic cooling trouble?
 - c. For what function an Economizer is used?
 - d. Write the functions of fuel nozzles.
 - e. Discuss the second law of thermodynamics.
 - f. What are the properties of coolants used for engines?
 - g. Enlist the different types of tractor aids available for performing operations.
 - h. What are the functions of gudgeon pin and connecting rod?
 - i. What is knocking of I.C. engine?
 - j. What are the animate sources of energy on the farms?

SECTION B

- 2. Attempt any three of the following: 10 x 3 = 30**
- a. Describe the construction and working a Magneto ignition system.
 - b. What do you understand by tractor stability? Suggest measures for safe operation of tractor.
 - c. Why are the tractors provided with very large rear wheels? What is the inflation pressure in pneumatic wheels of a tractor? Describe also the various points from where the tractor power is taken for useful work.
 - d. Classify the conventional and non-conventional energy sources. Explain wind energy sources.
 - e. Discuss the pneumatic governor and hydraulic governor in detail.

SECTION C

- 3. Attempt any one part of the following: 10 x 1 = 10**
- (a) With a neat and clean sketch describe the firing order and its criteria for sections in a tractor engine.
 - (b) What are the components of battery ignition system? Describe a spark plug with neat sketch.
- 4. Attempt any one part of the following: 10 x 1 = 10**
- (a)
 - i. What is the working principle of an internal combustion engine?
 - ii. Explain otto-cycle and diesel cycle?
 - (b) What do you understand by Gear spacing in a tractor? How it affects the

performance of a tractor?

5. Attempt any *one* part of the following: 10 x 1 = 10
- (a) Select a tractor and matching implements for production and operation in mango orchard.
 - (b) Differentiate between the general purpose tractors and power fillers. Enumerate the makes, horse power and name of manufacturer based in India.
6. Attempt any *one* part of the following: 10 x 1 = 10
- (a) Why does a tractor need clutch? What are the essential features of a good clutch?
 - (b) With the help of a neat and labeled sketch describe the valve systems of an internal combustion engine. Explain the L and I shaped valve functioning also.
7. Attempt any *one* part of the following: 10 x 1 = 10
- (a) Explain about fuel injector of diesel engine with neat diagram.
 - (b) What are the important test conditions of a tractor? How belt performance test differs from drawbar performance test?