



KERALA AGRICULTURAL UNIVERSITY  
B.Tech. (Agrl. Engg.) 2018 Admission

V Semester Final Examination-February-2021

Fpme 3109

Tractor System Controls (2+1)

Time: 2 hours

**I Fill in the blanks**

(10x1=10)

- 1 Engine fly wheel is made of \_\_\_\_\_.
  - 2 V belts are used for \_\_\_\_\_ short/long distance between drive and driven.
  - 3 Draw bar pull is measured by \_\_\_\_\_.
  - 4 The tyre size 12-38 means, that the sectional diameter of tyre is \_\_\_\_\_ and it is mounted on a rim of \_\_\_\_\_ diameter.
  - 5 The inflation pressure of the front wheel varies from \_\_\_\_\_ to \_\_\_\_\_ kg/cm<sup>2</sup>
- State True /False**
- 6 Camber angle is the inclination between the centre line of the tire and the vertical line.
  - 7 Diesel engines employed on tractors are two stroke type.
  - 8 The modern wheel type tractor is provided with steel rims and pneumatic tyres as the ground driven components.
  - 9 Crown gear is the component of hydraulic system.
  - 10 In tractors the rear part is heavier than the front part, to increase speed of tractor.

**II Write Short notes on ANY FIVE of the following**

(5x2=10)

- 1 List the advantages of air cooled engines
- 2 List out the human factors in tractor design.
- 3 What is the function of a gear box in tractor?
- 4 Advantages of friction clutches.
- 5 Advantage of three-point linkage.
- 6 List out the major components in steering system.
- 7 List the Major testing centers in India for tractor and Agricultural Machinery.

**III Answer ANY FIVE of the following.**

(5x4=20)

- 1 Hitching system of tractor drawn implements.
- 2 Explain the sliding mesh type gear box.
- 3 Working principle of brake, types and explain the hydraulic brake.
- 4 Explain the steering system.
- 5 Explain the front wheel alignment.
- 6 Briefly explain important components of power tiller.
- 7 What are the factors influencing the traction?

**IV Write an essay on any ONE of the following**

(1x10=10)

- 1 Explain the transmission systems in four wheeled tractors.
- 2 Explain the human engineering in tractor design.