

B.Sc.(Hons.) Horticulture

[Fifth Deans' Committee Recommended Syllabus]

Semester : VI
Course No. : H/ENGG 362
Credits : 2(1+1)
Day & Date : Saturday, 19.04.2025
Term : Second
Academic Year : 2024-25
Title : Farm Machinery and Power Engineering
Time : 14:00 to 16:00 hrs. Total Marks : 40

- Note :
1. Solve ANY EIGHT questions from SECTION 'A'.
 2. All questions from SECTION 'B' are compulsory.
 3. All questions carry equal marks.
 4. Draw neat diagram wherever necessary.

SECTION 'A'

- Q.1 Enlist the different sources of farm power. Give merits and demerits of human power and mechanical power.
- Q.2 Describe the working of four-stroke cycle engine.
- Q.3 Calculate the BHP of a 2 cylinder 4 stroke cycle internal combustion engine 12 x 15 cm. The mean effective pressure is 7 kg/cm² and speed of crankshaft is 1200 rpm. The mechanical efficiency is 75%.
- Q.4 What is the purpose of cooling? Give the principle, advantages and disadvantages of air cooling system of an I.C. engine.
- Q.5 Classify farm tractors. Discuss the factors considered for the selection of tractor.
- Q.6 Determine the horse power required to pull a four bottom 32 cm plough, working to the depth of 14 cm. The tractor is operating at a speed of 5.5 kmph. The soil resistance is 0.8 kg/cm².
- Q.7 What is Tillage? Give the objectives, classification and types of tillage.
- Q.8 How many acres can be covered by a harrow of width 1.5 m in a day of 8 hours with bullock power? The speed of the bullocks is assumed to be 4 kmph. If each spike of the harrow giving 1 kg resistance when there are 50 spikes. What hp would be necessary for the bullock to pull the harrow with the assumed speed?
- Q.9 What is Planter? Give the functions and types of planters and explain sugarcane planter.
- Q.10 Write short notes on (Any Two):
- a) Splash system of lubrication b) Blade harrow c) Seeding methods

SECTION 'B'

- Q.11 Define the following terms:
- 1) Disc angle 2) Tractor 3) Compression ratio 4) Farm Mechanization
- Q.12 Fill in the blanks:
- 1) The thermal efficiency of a diesel engine varies from _____ to _____ per cent.
- 2) A man can develop about _____ hp for doing farm work.
- 3) The tilt angle of a good plough varies between _____ and _____.
- 4) _____ is an art of placing seeds in the soil to have good germination in the field.

