MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END THEORY EXAMINATION

B.Sc.(Hons.) Horticulture

Semester	: VI (New)	Term	: Second	Academic Year	: 2022-23
Course No.	: H/ENGG 362	Title	: Farm Machinery and Power Engineering		
Credits	: 2 (1+1)				
Day & Date	: Tuesday, 11.07.2023	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 animal power and mechanical power.

Q.2 Describe working of Four stroke cycle engine.

Q.3 Calculate the BHP of a 4 stroke, 4 cylinder I.C. engine, which has cylinder bore of 12.5 cm, stroke length of 15 cm, crankshaft speed of 1000 rpm, frictional horse power of 30 hp and mean effective pressure is 7 kg/cm^2.

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 Calculate the area covered per day of 8 hours by a tractor drawn four bottom 35 cm plough, if the speed of ploughing is 5 km/hr and the time lost in turning is 10 per cent.

Q.7 Give the objectives of tillage. Enlist different types of tillage implements.

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 potato planter.

Q.10 Write short notes on (Any Two):

a) Internal combustion engine classification b) Mould board plough

c) Seeding methods

SECTION 'B'

Q.11 Define the following terms:

1) Indicated horse power 2) Tractor 3) Compression ratio 4) Harrowing

Q.12 Fill in the blanks:

1) The thermal efficiency of petrol engine varies from _____ to _____ per cent.

2) The man can develop of about _____ hp for doing farm work.

3) The disc angle of a good plough varies between _____ to _____degree.

4) _____is an art of placing seeds in the soil to have good germination in the field.

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