

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END THEORY EXAMINATION

B.Sc.(Hons.) Agriculture

Semester	: III (New)	Term	: First	Academic Year	: 2023-24
Course No.	: ENGG 232	Title	Farm Machinery and Power		
Credits	: 2 (1+1)	Time	: 9:00 to 11:00 hrs.	Total Marks	: 40
Day & Date	Friday, 8.12.2023				

- 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 Classify farm tractors. Discuss the factors considered for the selection of tractor.
- Q.2 Describe working of four stroke cycle engine.
- Q.3 Calculate the BHP of a 4 stroke, 4 cylinders 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/cm².
- 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 Enlist the different sources of farm power. Give merits and demerits of animal power and mechanical power.
- 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 hectares per day of 10 hours can be cut by a combine harvester with 4 m cutter bar, when it is running at 4 km/hr.
- Q.9 What is the purpose and main functions of sprayers? Give the advantages and disadvantages of spraying.
- Q.10 Write short notes on (Any Two):
- a) Carburetor b) Mould board plough c) Seeding methods

SECTION 'B'

- Q.11 Define the following terms:
- 1) Indicated horsepower 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) An average man can develop maximum power of about _____ hp for doing farm work.
- 3) The disc 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.

