

**MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE**  
**SEMESTER END THEORY EXAMINATION**

**B.Sc.(Hons.) Agriculture**

Semester	: III (New)	Term	: First	Academic Year	: 2022-23
Course No.	: ENGG 232	Title	: Farm Machinery and Power		
Credits	: 2 (1+1)	Time	: 09:00 to 11:00 hrs.	Total Marks	: 40
Day & Date	: Tuesday, 07.02.2023				

- 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 Enlist and explain different sources of farm power available in India.
- Q.2 A Massey Ferguson 1035 diesel tractor has a three cylinder four stroke engine (one power stroke for every two revolutions), cylinder bore = 88.9 mm, stroke = 127 mm, compression ratio = 16.5:1, belt horse power = 32 and engine speed = 2000 rpm;  
Calculate:  
i) Piston displacement ii) Displacement volume iii) Piston speed iv) Stroke bore ratio
- Q.3 Differentiate between diesel and petrol engine.
- Q.4 Explain in detail about different types of duster.
- Q.5 a) Enlist different sowing methods.  
b) The following results were obtained, while calibrating a seed drill.  
Calculate the seed rate per hectare.
- |                               |               |
|-------------------------------|---------------|
| (i) No. of furrows            | = 10          |
| (ii) Spacing between furrows  | = 20 cm       |
| (iii) Diameter of drive wheel | = 1.5 m       |
| (iv) Speed                    | = 500 rev/min |
| (v) Seed collected            | = 20 kg       |
- Q.6 a) What are the objectives of tillage?  
b) Explain in short about primary tillage.
- Q.7 Calculate area covered per day of 8 hrs by a tractor drawn 4 bottom, 35 cm M.B. plough, if speed of ploughing is 6 kmph. Time lost in turning is 6%.
- Q.8 Define tractor. Give the classification of different types of tractor.
- Q.9 What do you understand by proper registration and alignment of mover?

**(P.T.O.)**

Q.10 Write short notes (Any Two):

- a) Engine lubrication
- b) Power thresher
- c) Mould board plough

**SECTION 'B'**

Q.11 Define the following terms:

- 1) Harrow
- 2) Dibbling
- 3) Sprayer
- 4) Strip tillage

Q.12 Fill in the blanks:

- 1) \_\_\_\_\_ engine has more thermal efficiency.
- 2) A pair of bullocks can develop about \_\_\_\_\_ hp.
- 3) Camshaft rotates at \_\_\_\_\_ the speed of engine.
- 4) \_\_\_\_\_ is that part of plough bottom to which share, mould board and landside are attached.

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