MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE

SEMESTER END THEORY EXAMINATION

B.Sc.(Hons.) Agriculture

Semester	: III	Term	: First	Academic Year	: 2024-25
Course No.	: ENGG 232	Title	: Farm Machinery and Power		
Credits	: 2 (1+1)				
Day & Date	: Tuesday, 15.10.2024	Time	: 09:00 to 11:00 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 What is Farm mechanization? Write its advantages and limitations.

Q.2 Write the main objectives of tillage. Enlist the various types of primary and secondary tillage implements.

Q.3 Differentiate between Two stroke and Four stroke engines.

Q.4 The following results were obtained while calibrating a seed drill. Calculate the seed rate per hectare (kg/ha):

i. No. of furrow openers = 8
ii. Spacing between furrows = 15 cm
iii. Diameter of drive wheel = 1.5 m
iv. RPM of the drive wheel = 600
v. Seed collected = 25 kg.

Q.5 What is the purpose of engine cooling system? Explain in brief about force circulation water cooling system.

Q.6 Enlist the different types of sprayers and dusters. Write the functions of sprayers.

Q.7 Four-cylinder four stroke gas engine has cylinder diameter of 25 cm, stroke bore ratio is 1.8, clearance volume is 4500 cm^3, engine speed is 240 rev/min and mean effective pressure as 6.8 kg/cm^2. Calculate:

a) Swept Volume b) Indicated Horse Power (IHP)

Q.8 Discuss the factors considered for selection of tractor in brief.

Q.9 What are the functions of seed drill? Describe in brief about fluted roller type seed metering mechanism.

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

a) Alignment of mower

b) Differential unit

c) Two-way or Reversible plough

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SECTION 'B'

Q.11 Define the following terms:

1) Carburetor

2) Harvesting

3) Stroke

4) Cono weeder

Q.12 Fill in the blanks:

1) _____ is the process of detaching grains from the ear heads or from the plants.
2) The thermal efficiency of diesel engine varies from _____ to _____ per cent.
3) The tilt angle of a good plough varies between _____ and _____ degree.
4) _____ is a machine, used to cut cereals or grain crops.

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