

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE  
SEMESTER END EXAMINATION

B.Sc. (Agri.)

Semester	: V (New)	Term	: I	Academic Year	: 2013-14
Course No.	: ENGG 353	Title	: Farm Power and Machinery		
Credits	: 2(1+1)				
Day & Date	: Monday, 28.10.2013	Time	: 14.00 to 16.00	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 diagrams wherever necessary.

SECTION "A"

- 2 Q.1 Give the merits and demerits of animal and mechanical power. ✓
- Q.2 Explain the working of simple carburetor with help of neat diagram. ✓
- 4 Q.3 A four stroke engine has a mean effective pressure of  $7 \text{ Kg/cm}^2$ , area of piston is  $730 \text{ Kg/cm}^2$ , stroke length 45 cm, torque due to brake load is 110 Kg-meter, fuel consumption is 4.5 Kg and working speed 120 rev/min. Find IHP, BHP, Mechanical efficiency and specific fuel consumption. ✓
- 3 Q.4 Define tractor. Give different types of tractors. ✓
- Q.5 Find the cost of using a tractor per hp-hr when the cost of 35HP diesel tractor is Rs. 4,55,000/-. life of tractor is 10 years, rate of interest is 12 per cent and working hours per year are 1000 hours Make suitable assumption: if necessary. ✓
- Q.6 Give the advantages and disadvantages of disc plough. ✓
- Q.7 A harrow with 50 spikes each giving a resistance of 1 kg, speed of the bullocks 4 km/hour and working width of harrow 1.5 meter, calculate: ✓  
i) Area covered per day of 8 hours ii) Required horse power to pull the harrow
- Q.8 Give the names of different methods of sowing crops and state the function of seed drill. ✓
- Q.9 What do you understand by proper registration and alignment of mower? ✓
- Q.10 Give the classification of sprayers and dusters. ✓

SECTION "B"

- Q.11 Select the proper answer from the bracket. ✓
- 1) \_\_\_\_\_ has more thermal efficiency. (Diesel engine/Carburetor engine)
  - 2) The angle made by disc blade with vertical plane in disc plough is known as \_\_\_\_\_ (tilt angle/ disc angle/ king pin inclination)
  - 3) \_\_\_\_\_ is the power available at the piston head. (BHP/IHP/FHP)
  - 4) A pair bullock can develop about \_\_\_\_\_. (One-tenth/one/half)
- Q.12 Define the following terms. ✓
- 1) Tillage
  - 2) Harvesting
  - 3) Seed metering
  - 4) Horse power

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