

AMAG12 FARM MACHINERY AND EQUIPMENT

UNIT I OBJECTIVES OF FARM MECHANIZATION.

- 1.1 Classification of farm machines. Materials of construction & heat treatment.
- 1.2 Principles of operation and selection of machines used for production of crops.
- 1.3 Field capacities & economics.

UNIT-2 TILLAGE

- 2.1 Primary and secondary tillage equipment.
- 2.2 Forces acting on tillage tools.- Field operation patterns.
- 2.3 Draft measurement of tillage equipment: Earth moving equipment their construction & working principles- viz Bulldozer, Trencher, Excavators etc.;
- 2.4 Sowing, planting & transplanting equipment their calibration and adjustments.

UNIT-3 FERTILIZER APPLICATION EQUIPMENT

- 3.1 Weed control and Plant protection equipment sprayers and dusters, their calibration, selection, constructional features of different components and adjustments.
- 3.2 Work physiology of men and women.

UNIT-4 PRINCIPLES & TYPES OF CUTTING MECHANISMS.

- 4.1 Construction & adjustments of shear & impact type cutting mechanisms. Crop harvesting machinery: mowers, windrowers, reapers, reaper binders and forage harvesters.
- 4.2 Forage chopping & handling equipment. Threshing mechanics & various types of threshers.
- 4.3 Threshers, straw combines &- grain combines, maize harvesting & shelling equipment, Root crop harvesting equipment potato, groundnut etc.,
- 4.4 Cotton picking & Sugarcane harvesting equipment.

UNIT-5 PRINCIPLES OF PLANTATION CROPS AND FRUIT HARVESTING TOOLS AND MACHINES

- 5.1 Horticultural tools and gadgets.
- 5.2 Testing of farm machine. Test codes & procedure. Interpretation of test results.
- 5.3 Selection and management of farm machines for optimum performance.
- 5.4 Workplace layout for men and women.

Reference Books:

1. Kepner, R.A., Bainer Roy, and Barges,- E.C. (1978). Principals of Farm Machinery, . CBS Publishers and Distributors, Delhi 17.
2. Kurtz,G.L., Thompson and Claer, P. (1984). Design of Agricultural Machinery. John Wiley & Sons, New York.
3. Michael, A. M. and Ojha, T.P. (1985). Principles of Agricultural Engineering. (Vol. II). Jain brothers, New Delhi.