

(Following Paper ID and Roll No. to be filled in your Answer Book)

Roll No.

--	--	--	--	--	--	--	--	--	--

B.Tech. (Semester-III)

SPL. THEORY EXAMINATION, 2014-15

FARM MACHINERY

Time : 3 Hours]

[Total Marks : 100

Note: The question paper is divided into three sections. Attempt each section.

Section – A

1. Attempt the following short answer type questions: 10×2=20
- (a) Define 'Farm mechanization' and specify two objectives.
 - (b) What are the objectives of primary tillage?
 - (c) Why seed and fertilizer metering devices are essential?
 - (d) What do you understand by Land grading?
 - (e) Give any one basic difference between 'Sprayers and dusters'.

- (f) For what purposes the Windrowers are used?
- (g) Define Alignment and Registration of mower.
- (h) What is the criteria for selecting sprayers?
- (i) How weeds harm the crops?
- (j) List the equipments used for root crops.

Section – B

2. Attempt any three parts of the following: 10×3=30
- (a) Discuss the various adjustments of a mould board plough.
 - (b) Differentiate between construction and working of seed drill and maize planter.
 - (c) With the help of suitable numerical example, find per hectare cost of harvesting wheat by combine harvester. <https://www.aktuonline.com>
 - (d) Identify two most important farm machines of Indian farming and discuss their utility.
 - (e) What are dynamometer? For what purposes they are employed? Classify them and explain the working of any one of them.

Section – C

3. Attempt any five parts of the following: 10×5=50
- (a) Discuss the construction and adjustment of shear and impact type cutting mechanisms.
 - (b) Write short note on grain combine and straw combines.

- (c) Explain the mechanics of hitching of a tractor.
- (d) Define the term field capacity, theoretical field capacity and field efficiency of a machine. Calculate the time required to drill 5 ha of wheat by bullock drawn seed drill with 5 furrow openers spaced 20 cm apart and the drill is operated at 50 m/min. Take field efficiency as 80%.
- (e) Give salient constructional details and working of self propelled rice transplanter.
- (f) Assuming suitable numerical data, find per hectare cost of sugarcane planting.
- (g) Write short notes on the following:
 - (i) Furrow openers
 - (ii) Annealing and case hardening
 - (iii) Calibration
 - (iv) Forage harvester

—x—