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15162

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) *All questions are compulsory.*
 - (2) *Illustrate your answers with neat sketches wherever necessary.*
 - (3) *Figures to the right indicate full marks.*
 - (4) *Assume suitable data, if necessary.*
 - (5) *Use of Non-programmable Electronic Pocket Calculator is permissible.*
 - (6) *Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.*

Marks

1. Attempt any five :

20

- a) Define farm mechanization. State its objectives.
- b) What is meant by draft ? What are the factors affecting draft ?
- c) Explain the concept of field capacity and field efficiency.
- d) How seed drill is calibrated ? Explain.
- e) State the function and adjustment of sprayer and duster.
- f) List out the horticultural tools and gadgets. Draw a neat sketch of any one horticultural tools and gadgets.
- g) What are the types of threshers ? Explain threshing mechanics.

2. Attempt any two :

16

- a) Explain the scope for development and status of farm mechanization in India. State its limitations and advantages.
- b) Explain the constructional details, adjustments and working of disc narrow secondary tillage tools.
- c) State the selection criterion of farm machines and matching equipments of farm needs. How is cost of operation of farm machine calculated ?

3. Attempt any two :

16

- a) State and explain forces acting on toolage tools.
- b) Explain applications and working principle of Bulldozer. Also state its advantages.
- c) Discuss the repair and maintenance procedure of plant protection equipment. What are their safety precautions ?

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**4. Attempt any two :****16**

- a) Explain construction and adjustments of impact type cutting mechanisms.
- b) List out the material used for threshers. Explain repair and maintenance process of oldpad thresher.
- c) What are the different terms used related with ploughing ? Explain any one method of ploughing.

5. Attempt any two :**16**

- a) Explain construction and working of manure spreaders with sketch.
- b) What are the faults to be observed in harvesting equipments ? Prepare a trouble shooting chart for windrower and reaper.
- c) What is straw combines and grain combines ? What are the precaution to be taken in threshing equipments ?

6. Attempt any four :**16**

- a) Compare primary tillage equipment and secondary tillage equipments.
 - b) Write a note on “Draft measurement of tillage equipment”.
 - c) State and explain method of planting sugarcane.
 - d) Draw a labelled sketch of trencher.
 - e) List the parts and material used for plant protection equipment.
 - f) Explain construction and working of Groundnut digger.
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