

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END THEORY EXAMINATION

B.Tech. (Food Technology)

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|------------|------------------------|-------|----------------------------|---------------|-----------|
| Semester | : I (New) | Term | : First | Academic Year | : 2024-25 |
| Course No. | : FE-111 | Title | : Post Harvest Engineering | | |
| Credits | : 3(2+1) | Time | : 10:00 to 13:00 hrs. | Total Marks | : 80 |
| Day & Date | : Thursday, 13.02.2025 | | | | |

- 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 a) Discuss the factors affecting cropping pattern in India.
b) Define Post-harvest losses. Explain the reasons of post-harvest losses.
- Q.2 Explain the scope and importance of material handling equipments.
- Q.3 Define Water activity. Why measurement of water activity is essential for controlling post-harvest losses?
- Q.4 Classify Bucket elevator and explain the construction, working, advantages and applications of bucket elevator with neat sketch.
- Q.5 Enlist the Engineering properties of food material and explain any one property in brief.
- Q.6 Enlist the types of grain cleaner and explain in brief air screen cleaner with diagram.
- Q.7 Explain in detail the principle, components, working and design consideration, capacity of belt conveyor with neat sketch.
- Q.8 Define Grading. Enlist the equipments used for grading of fruits and vegetables and explain any one of them.
- Q.9 Describe the construction and working principles of manually and power-operated decorticators.
- Q.10 a) Explain the importance of Post Harvest Technology.
b) Explain working of magnetic separator.

SECTION 'B'

- Q.11 Define the following terms:
- 1) Post Harvest Technology
 - 2) Cropping pattern
 - 3) Peeling
 - 4) Sorting
 - 5) Material handling
 - 6) Terminal velocity
 - 7) Pneumatic conveying
 - 8) Decortication

(P.T.O)

Q.12 Fill in the blanks:

- 1) _____ conveyor consists of a tubular or U-shaped trough in which a shaft with spiral screw revolves.
- 2) _____ is an operation done by blowing a current of air through grain in order to remove the chaff.
- 3) _____ is a post-harvest operation that involves separating grains or shells from the part of a plant that holds them.
- 4) Bucket elevators with a belt carrier, can be used at fairly high speeds of _____ m/s.
- 5) _____ is used in post-harvest technology to remove kernels from maize cobs.
- 6) A chain is a reliable machine component, which transmits power by means of _____ force.
- 7) The magnetic separator performs separation on the basis of _____ and _____ properties of the grain.
- 8) Water activity range for canned food is _____.

