

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Tech. (Agril. Engg.)

| | | |
|----------------------|------------------------------------|-------------------------|
| Semester : IV (New) | Term : II | Academic Year : 2015-16 |
| Course No. : APE 244 | Title : Crop Process Engineering | |
| Credits : 3 (2+1) | Day & Date : Wednesday, 04.05.2016 | Time : 14.00 to 17.00 |
| | | Total Marks : 80 |

- 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"

- 1 Explain the different methods of fruits and vegetables preservation.
- 2 Enlist the different post harvest unit operation of grain crops and explain it in short.
- 3 Explain the construction details of screw conveyor with neat diagram.
- 4 What are the advantages and disadvantage of parboiling of paddy?
- 5 Draw the process flow chart of dry and wet milling methods of pulses.
- 6 a) Explain the process for tomato cocktail.
b) What are the advantages of hot pulping of tomatoes?
- 7 a) Draw the flow chart for preparation of pomegranate RTS.
b) Explain the process for preparation of banana powder.
- 8 a) Explain the Bond's law for estimation of power requirement for crushing and grinding.
b) Calculate the power required to crush 2000 kg/hr of material if 80% of the feed passes through IS sieve No.480 (4.75 mm opening) and 80 % of the product passes through IS sieve No.50 (0.5 mm opening). Work index of the material is 6.30.
- 9 a) Explain the principle and working of pneumatic separator.
b) Draw a basic flow chart of rice processing in a modern mill.
- 10 Enlist the most common types of mechanical devices for grain handling and give the points to be considered while selecting the conveying system.

SECTION "B"

- 11 Fill in the blanks.
 - 1) For transportation of grain by belt conveyor, the belt speed should not increase _____.
 - 2) Screw conveyor can be used at any angle upto _____ from the horizontal.
 - 3) The wiremesh is usually specified by _____ which is number of opening per linear inch.
 - 4) The weight of hull is _____ % of the total weight of paddy grain.

(P.T.O.)

5) Pulses contain about _____ % carbohydrate.

6) _____ is the dispersing of components one throughout the other.

7) The red colour of tomato is due to _____ pigments.

8) _____ indicates the uniformity of grind in resultant product.

Q.12 Define the following terms.

1) Shelling

3) Aperture

5) Crushing efficiency

7) Effectiveness of screen

2) Cleaning

4) Shearing

6) Degree of grinding

8) Head rice

