

MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Tech. (Agril. Engg.)

Semester : IV (Old)	Term : II	Academic Year : 2017-18
Course No. : APE 244	Title : Crop Process Engineering	
Credits : 3 (2+1)	Day & Date : Monday, 07.05.2018	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"

- Q.1 a) Enlist different devices used for size reduction of material and explain Jaw crusher.
b) Explain Rittinger's and Kick's Law.
- Q.2 Work out the values of fineness modulus and average particle size from the following observations:
- | IS sieve No. | 100. | 70 | 50 | 40 | 30 | 20 | 15 | Pan |
|----------------------------------|------|-----|------|------|------|------|-----|-----|
| Weight of material retained (gm) | 0.0 | 1.4 | 16.7 | 36.7 | 82.2 | 96.0 | 8.0 | 8.7 |
- Q.3 a) Explain in brief working of vertical whitening cone.
b) Describe in brief mixing equipments.
- Q.4 Explain the flow chart for processing of dried onion.
- Q.5 During the evaluation of an air screen cleaner with two screens the following observations were taken.
- a) The impurities present in the feed were 6.5%.
 - b) The impurities present in clean grain outlet were 0.5%.
 - c) The outflow of blower contained 0.2% clean seed.
 - d) The overflow of the 1st screen contained 1% clean seed.
 - e) The underflow contained 0.5% clean seed.
- Compute the cleaning efficiency of the cleaner.
- Q.6- Explain in brief pneumatic and aspirator separator.
- Q.7 Classify different methods of parboiling and explain CFTRI method of parboiling of paddy.
- Q.8 Explain the flow process charts of wet and dry milling of pulses.
- Q.9 Enlist different types of separators. Explain in detail indented cylinder separator.
- Q.10× Write short notes (Any Two).
- a) Processing of banana
 - b) Methods of food preservation
 - c) Processing of pomegranate

(P.T.O.)

SECTION "B"

Q.11 Fill in the blanks.

- 1) _____ is used to remove the final part of the bran layer and simultaneously cool the grain through an air stream of ambient temperature.
- 2) The most commonly used solvent in the solvent extraction plants is _____.
- 3) If the gap between rolls of rubber roll sheller is properly adjusted, this equipment can shell up to _____% of paddy fed to it.
- 4) Pulses are major source of _____.
- 5) An endless belt operating between two pulleys with its load supported on idlers is called _____.
- 6) The best separator to separate mustard from wheat is _____.
- 7) _____ is the process of size reduction which combines cutting and crushing.
- 8) In sieve analysis, the average size of particle (D) in mm is calculated by _____.

Q.12 Define the following terms.

- | | |
|----------------------|----------------|
| 1) Pulse milling | 2) Grading |
| 3) Parboiling | 4) Work index |
| 5) Sorting | 6) Broken rice |
| 7) Terminal velocity | 8) Screening |

