

● Total number of printed pages—4

53 (FPT 402) FPTC-II

2015

FOOD PRODUCT TECH II

Paper : FPT 402

(Cereals & Legumes Processing Tech.)

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer **any five** questions.

INSTRUCTIONS :

- (i) Illustrate your answers with suitable sketches and examples.
- (ii) Make suitable assumption(s) wherever applicable.
- (iii) Preferably, write the answers in sequential order.

Contd.

1. (a) Wheat was milled in a burr mill. The ground product was later on analyzed in a set of IS screens. The screen analysis is given in the following table. Calculate the screen effectiveness of

(i) IS 50 Mesh

(ii) IS 30 Mesh

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Cumulative Mass fraction of material retained over each screen

IS Screen	width of opening (mm)	Cumulative mass fraction smaller than screen op.		
		Feed	Over flow	Under flow
100	1.000	—	—	—
70	0.708	0.02	0.098	—
50	0.500	0.16	0.615	0.030
40	0.420	0.43	0.805	0.120
30	0.296	0.75	0.955	0.610
20	0.211	0.93	0.990	0.842
15	0.157	0.97	1.000	0.920
Pan	0.000	1.00	—	1.000

- (b) What do you mean by screening? Write down the types of screen used in Food Processing industry. Discuss briefly vibratory screen with *two* functions.

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2. (a) In a batch soaking and steaming unit operations, raw paddy with an initial moisture content of 0.128 (db) is soaked at 70°C under isothermal conditions. If the initial moisture gain Δx_i for this paddy at 70°C is 0.045 and the value of Km is given by 2.199×10^{-3} , calculate the time required to attain a moisture content of 41.9% (db). 10
- (b) Explain the unit operations involved in the production of parboiled rice. Write down 2-advantages and 2-disadvantages of parboiling. 10
3. (a) Briefly discuss post-harvest quality and quantity losses of Cereals & Legumes. 7
- (b) List out the pre-processing practices of rice for their safe storage. 8
- (c) Discuss curing and ageing of paddy. 5
4. Write short notes on : 5×4=20
- (a) Tempering of wheat
- (b) Popped corn
- (c) Spiral separator
- (d) Pearling cone.

5. (a) Draw Flow diagram of dry milling of pulses. 10
(b) Draw the Flow diagram of rice processing in a Modern mill. 10
6. (a) Explain in detail the construction and working of Rubber roll husker with neat sketches. Mention their advantages, disadvantages and industrial applications. 10
(b) What is meant by C.I.P ? Describe multiple use C.I.P. system. Write its advantages and disadvantages. 10
7. Differentiate the following : $4 \times 5 = 20$
- (a) Sorting & Grading
(b) Disc Separator & Spiral Separator
(c) Hard Wheat & Soft Wheat
(d) Parboiling of Rice & Parboiling of Wheat.
(e) Actual Screen & Ideal Screen.
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