

(Following Paper ID and Roll No. to be filled in your Answer Books)

PAPER ID :

Roll No.

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B.TECH.

Theory Examination (Semester-VI) 2015-16

EPBM & FOOD QUALITY

Time : 3 Hours

Max. Marks : 100

Note: Attempt all questions.

Section-A

Q.1. Attempt any *four* parts of the following.

(5×4=20)

- (a) How would you define density and specific gravity of food grain? Explain the pycnometer method to determination of specific gravity of agricultural products.
- (b) Explain the different methods to estimate the surface area of fruits and vegetables.
- (c) Explain the working principle of hunter lab.
- (d) Define the following terms: (i) Sphericity (ii) Specific heat (iii) Thermal conductivity (iv) Thermal diffusivity
- (e) Define shape and size. Explain the shapes of fruits and vegetables.

Section-B

Q.2. Attempt any *four* parts of following.

(5×4=20)

- (a) Derive relationship between drag coefficient (C) and Reynold number (Re), while upper limit of Re is 1000.
- (b) Derive Maxwell model equation and explain the time dependent stress behaviour of the model with the help of suitable curve.
- (c) Discuss any one dynamic test used for characterization of rheology of solid foods.
- (d) Explain rolling resistance and hardness in detail.
- (e) Assuming the specific gravity of 1.0 and weight density of 62.4 lb/ft³ of water, using the platform scale method calculate the volume and specific of an apple using the following data: Weight of apple in air= 0.292 lb, Weight of container with water= 2.24 lb and Weight of container + water + submerged apple= 2.61 lb.

Section-C

Q.3. Attempt any *two* parts of following. (10×2=20)

- (a) What is sampling? What are the objectives of sampling? Explain the different sampling techniques in detail.
- (b) What are sensory evaluation techniques of food products? Explain the procedure of panel selection for sensory quality control.
- (c) What is the objective of quality control? Discuss different methods of quality control.

Q.4 Attempt any *two* parts of following. (10×2=20)

(a) Write short note on any two of the following:

- i. AGMARK
- ii. GMP
- iii. Codex Alimentarius Commission
- iv. ISO: 9000

(b) Explain in detail on In-place cleaning systems of different equipment in food industries. Write their advantage and disadvantage.

(c) Differentiate between TQM and TQC.

Q. 5 Attempt any two question. (10x2=20)

- (a) Describe the HACCP (Hazard Analysis and Critical Control Point) and ISO-9000 series.
- (b) What is the requirement and sampling procedure for granular and powdered materials?
- (f) Discuss different Internal and External damage occurring in food product during transportation