

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BVoc DEGREE EXAMINATION MAY 2024
(Third Semester)

Branch – FOOD PROCESSING TECHNOLOGY

UNIT OPERATIONS IN FOOD PROCESSING

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

- 1 Identify the heat transfer between two bodies by currents of moving gas or fluid.
(i) Convective (ii) Conductive
(iii) Radiation (iv) Black body radiation
- 2 Predict the type of evaporator where the product flows by gravity in the tubes by creating a thin liquid film on the inner walls
(i) Multiple effect (ii) Single effect
(iii) Falling film (iv) Climbing film
- 3 Which flow measurement device, is based on the principle of Bernoulli's equation?
(i) Venturimeter (ii) Orifice meter
(iii) Pitot tube (iv) Fluid meter
- 4 Recall the distillation process for temperature-sensitive substances.
(i) Steam (ii) Pressure
(iii) Vacuum (iv) Flash
- 5 Name the filter media in food applications that is used to filter foods at lower temperatures.
(i) SS (ii) Polypropylene or polyester
(iii) Cotton (iv) Wool

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

6. a Explicate the modes of heat transfer.
(OR)
b Depict the characteristics of different refrigerants.
7. a Differentiate between single effect and multiple effect evaporator.
(OR)
b Identify the principle of working of agitated batch crystallizer.
8. a Define specific volume, specific gravity, specific viscosity.
(OR)
b Express the operation of Pitot's tube.
9. a List the factors affecting extraction in food processing operations.
(OR)
b Expound the vacuum distillation process in foods.
10. a Classify the types of spices. Give examples.
(OR)
b Define Stoke's law. Explain the sedimentation of particles in gas-cyclone.

Cont...

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11. a Elaborate on the components and working principle of vapour compression systems, with a flow diagram.
(OR)
b Elucidate on cross flow heat exchangers with neat diagram.
12. a Write in detail on falling film evaporator. Give the significance.
(OR)
b Interpret the Swenson-Walker vacuum crystallizer in detail.
13. a Compose notes on using Pascal's law to measure fluid pressure.
(OR)
b Enunciate the principle of working of venturimeter with neat diagram.
14. a Demonstrate the types of liquid mixing equipment in food processing.
(OR)
b Distinguish between flash distillation and vacuum distillation. Depict the steps in steam distillation.
15. a Evaluate the steps in rotary vacuum filtration, with neat diagram.
(OR)
b Discuss the process of gravitational sedimentation with neat diagram.

Z-Z-Z

END