

# National Testing Agency

|                              |                                          |
|------------------------------|------------------------------------------|
| <b>Question Paper Name :</b> | Dairy Engineering 17th September Shift 2 |
| <b>Subject Name :</b>        | Dairy Engineering                        |
| <b>Creation Date :</b>       | 2021-09-17 18:54:40                      |
| <b>Duration :</b>            | 120                                      |
| <b>Total Marks :</b>         | 480                                      |
| <b>Display Marks:</b>        | Yes                                      |

## Dairy Engineering

|                                      |           |
|--------------------------------------|-----------|
| <b>Group Number :</b>                | 1         |
| <b>Group Id :</b>                    | 190889113 |
| <b>Group Maximum Duration :</b>      | 0         |
| <b>Group Minimum Duration :</b>      | 120       |
| <b>Show Attended Group? :</b>        | No        |
| <b>Edit Attended Group? :</b>        | No        |
| <b>Break time :</b>                  | 0         |
| <b>Group Marks :</b>                 | 480       |
| <b>Is this Group for Examiner? :</b> | No        |

## Part A: General Knowledge

|                                |           |
|--------------------------------|-----------|
| <b>Section Id :</b>            | 190889263 |
| <b>Section Number :</b>        | 1         |
| <b>Section type :</b>          | Online    |
| <b>Mandatory or Optional :</b> | Mandatory |

|                                                                     |           |
|---------------------------------------------------------------------|-----------|
| <b>Number of Questions :</b>                                        | 20        |
| <b>Number of Questions to be attempted :</b>                        | 20        |
| <b>Section Marks :</b>                                              | 80        |
| <b>Enable Mark as Answered Mark for Review and Clear Response :</b> | Yes       |
| <b>Sub-Section Number :</b>                                         | 1         |
| <b>Sub-Section Id :</b>                                             | 190889303 |
| <b>Question Shuffling Allowed :</b>                                 | Yes       |

**Question Number : 1 Question Id : 19088912862 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is the device used to measure the power and speed of the wind?

1. Avometer
2. Anemometer
3. Airometer
4. Aviontimeter

**Options :**

19088951341. 1
19088951342. 2
19088951343. 3
19088951344. 4

**Question Number : 2 Question Id : 19088912863 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Optical fibre used the concept of which of the following?

1. Reflection
2. Refraction
3. Total internal reflection
4. Total internal refraction

**Options :**

- 19088951345. 1
- 19088951346. 2
- 19088951347. 3
- 19088951348. 4

**Question Number : 3 Question Id : 19088912864 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Yellow vein mosaic is the viral disease of which of the following plants?

- 1. Ladyfinger
- 2. Papaya
- 3. Sugarcane
- 4. Banana

**Options :**

- 19088951349. 1
- 19088951350. 2
- 19088951351. 3
- 19088951352. 4

**Question Number : 4 Question Id : 19088912865 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following organ(s) is affected by Mumps disease?

- 1. Entire body
- 2. Skin
- 3. Eye
- 4. Parotid

**Options :**

- 19088951353. 1
- 19088951354. 2

19088951356. 4

**Question Number : 5 Question Id : 19088912866 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is the chemical name of vitamin B<sub>2</sub>?

1. Riboflavin
2. Calciferol
3. Pyridoxin
4. Niacin

**Options :**

19088951357. 1

19088951358. 2

19088951359. 3

19088951360. 4

**Question Number : 6 Question Id : 19088912867 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is not the input unit of the computer?

1. Mouse
2. Keyboard
3. Screen
4. Scanner

**Options :**

19088951361. 1

19088951362. 2

19088951363. 3

19088951364. 4

**Question Number : 7 Question Id : 19088912868 Question Type : MCQ Option Shuffling : No Is**

**Correct Marks : 4 Wrong Marks : 1**

The digital computer operates on which of the following principle?

1. Measurement
2. Calculation
3. Logical
4. Electrification

**Options :**

19088951365. 1

19088951366. 2

19088951367. 3

19088951368. 4

**Question Number : 8 Question Id : 19088912869 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The non-cooperation movement of Gandhiji was launched in which of the following year?

1. 1915
2. 1922
3. 1920
4. 1930

**Options :**

19088951369. 1

19088951370. 2

19088951371. 3

19088951372. 4

**Question Number : 9 Question Id : 19088912870 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

An Islamic revivalist movement named Wahabi movement was founded by which of the following person?

1. Sian Saheb
2. Syed Ahmed
3. Haji Shariat-Allah
4. DaduMian

**Options :**

19088951373. 1

19088951374. 2

19088951375. 3

19088951376. 4

**Question Number : 10 Question Id : 19088912871 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is considered as the “Magna Carta of England Education in India”?

1. Hunter education commission
2. Lord Macaulay’s Minute
3. Wood’s Despatch
4. Thomas Babington Macaulay

**Options :**

19088951377. 1

19088951378. 2

19088951379. 3

19088951380. 4

**Question Number : 11 Question Id : 19088912872 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following nutrient does not come under the ambit of 'macro-nutrients in Soil Health Card?

1. Nitrogen
2. Zinc
3. Phosphorous
4. Potassium

**Options :**

19088951381. 1

19088951382. 2

19088951383. 3

19088951384. 4

**Question Number : 12 Question Id : 19088912873 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Cole crops, root crops and legumes come under the ambit of which of the following?

1. Olericulture
2. Pomology
3. Viticulture
4. Arboriculture

**Options :**

19088951385. 1

19088951386. 2

19088951387. 3

19088951388. 4

**Question Number : 13 Question Id : 19088912874 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The study of individual trees, shrubs, vines, and perennial woody plants is known as which of the following?

1. Turf management
2. Arboriculture
3. Pomology
4. Viticulture

**Options :**

19088951389. 1

19088951390. 2

19088951391. 3

19088951392. 4

**Question Number : 14 Question Id : 19088912875 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The ministry is implementing MIDH (Mission for Integrated Development of Horticulture) with effect from which of the following year?

1. 2012-13
2. 2019-20
3. 2015-16
4. 2014-15

**Options :**

19088951393. 1

19088951394. 2

19088951395. 3

19088951396. 4

**Question Number : 15 Question Id : 19088912876 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The interaction of soils with living things, particularly plants are well known as which of the following?

1. Edaphology
2. Pedology
3. Soil zoology
4. Pedogenesis

**Options :**

19088951397. 1

19088951398. 2

19088951399. 3

19088951400. 4

**Question Number : 16 Question Id : 19088912877 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following systems has also incorporated social aspects in itself?

1. Landscaping
2. Permaculture
3. Horticulture
4. Forest gardening

**Options :**

19088951401. 1

19088951402. 2

19088951403. 3

19088951404. 4

**Question Number : 17 Question Id : 19088912878 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What do you term the phenomenon whereby the specific gene is added to the plant for producing a desirable phenotype?

1. Genetic manipulation
2. Genetic recombination
3. Genetic modification
4. Genetic hybridisation

**Options :**

19088951405. 1

19088951406. 2

19088951407. 3

19088951408. 4

**Question Number : 18 Question Id : 19088912879 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What is the focus of the participatory plant breeding program?

1. Scientists
2. Plants
3. Environment
4. Farmers

**Options :**

19088951409. 1

19088951410. 2

19088951411. 3

19088951412. 4

**Question Number : 19 Question Id : 19088912880 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

How do you term the form of agriculture, in which, industrialized production of crops and animal products takes place?

1. Manufactured agriculture
2. Modern agriculture
3. Industrial agriculture
4. Mechanistic agriculture

**Options :**

19088951413. 1

19088951414. 2

19088951415. 3

19088951416. 4

**Question Number : 20 Question Id : 19088912881 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Micro-irrigation fund of Rs. 5,000 crore has been placed with which of the following organization?

1. NABARD
2. IDBI
3. SBI
4. RRBs

**Options :**

19088951417. 1

19088951418. 2

19088951419. 3

19088951420. 4

## **Part B Core : Dairy Science :Dairy Technology & Food Technology**

**Section Id :** 190889264

**Section Number :** 2



|                                                                     |           |
|---------------------------------------------------------------------|-----------|
| <b>Section type :</b>                                               | Online    |
| <b>Mandatory or Optional :</b>                                      | Mandatory |
| <b>Number of Questions :</b>                                        | 50        |
| <b>Number of Questions to be attempted :</b>                        | 50        |
| <b>Section Marks :</b>                                              | 200       |
| <b>Enable Mark as Answered Mark for Review and Clear Response :</b> | Yes       |
| <b>Sub-Section Number :</b>                                         | 1         |
| <b>Sub-Section Id :</b>                                             | 190889304 |
| <b>Question Shuffling Allowed :</b>                                 | Yes       |

**Question Number : 21 Question Id : 19088912882 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**  
**Correct Marks : 4 Wrong Marks : 1**

The casein fraction which has maximum carbohydrates associated with it is \_\_\_\_\_.

- |           |           |
|-----------|-----------|
| (1) Alpha | (2) Beta  |
| (3) Kappa | (4) Gamma |

**Options :**

- 19088951421. 1
- 19088951422. 2
- 19088951423. 3
- 19088951424. 4

**Question Number : 22 Question Id : 19088912883 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**  
**Correct Marks : 4 Wrong Marks : 1**

What is the proportion in which buffalo milk with 6.5% fat and low fat milk with 0.5% fat are to be combined in order to produce mixed milk conforming to standardized milk fat standards?

- |           |           |
|-----------|-----------|
| (1) 1 : 1 | (2) 2 : 1 |
| (3) 1 : 2 | (4) 1 : 3 |

**Options :**

19088951425. 1

19088951426. 2

19088951427. 3

19088951428. 4

**Question Number : 23 Question Id : 19088912884 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The environmental management of a dairy plant is denoted by the ISO series \_\_\_\_\_.

(1) 9000

(2) 11000

(3) 14000

(4) 22000

**Options :**

19088951429. 1

19088951430. 2

19088951431. 3

19088951432. 4

**Question Number : 24 Question Id : 19088912885 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

**Options :**

- 19088951433. 1
- 19088951434. 2
- 19088951435. 3
- 19088951436. 4

**Question Number : 25 Question Id : 19088912886 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Deficiency of calcium in the diet leads to

- |                  |             |
|------------------|-------------|
| (1) Goitre       | (2) Anemia  |
| (3) Osteoporosis | (4) Rickets |

**Options :**

- 19088951437. 1
- 19088951438. 2
- 19088951439. 3
- 19088951440. 4

**Question Number : 26 Question Id : 19088912887 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

\_\_\_\_\_ is an example of a medical food.

- |                           |                             |
|---------------------------|-----------------------------|
| (1) Sports drinks         | (2) Symbiotic yoghurt       |
| (3) Flavoured dairy drink | (4) Lactose hydrolysed milk |

**Options :**

- 19088951441. 1
- 19088951442. 2
- 19088951443. 3
- 19088951444. 4

**Question Number : 27 Question Id : 19088912888 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The antimicrobial protein found in milk is

- |                       |                            |
|-----------------------|----------------------------|
| (1) Glycomacropeptide | (2) Lactoferrin            |
| (3) MGF protein       | (4) $\beta$ -Lactoglobulin |

**Options :**

19088951445. 1

19088951446. 2

19088951447. 3

19088951448. 4

**Question Number : 28 Question Id : 19088912889 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The protein content in retentate can be further increased using

- |                     |                     |
|---------------------|---------------------|
| (1) Diafiltration   | (2) Nanofiltration  |
| (3) Microfiltration | (4) Reverse osmosis |

**Options :**

19088951449. 1

19088951450. 2

19088951451. 3

19088951452. 4

**Question Number : 29 Question Id : 19088912890 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

**Options :**

- 19088951453. 1
- 19088951454. 2
- 19088951455. 3
- 19088951456. 4

**Question Number : 30 Question Id : 19088912891 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements : One is labelled as Assertion (A) and the other is labelled as Reason (R).

Assertion (A) : It is, in general difficult to stabilize a water in oil emulsion.

Reason (R) : Charge effects are not applicable and only steric stabilization is possible in W/O emulsions.

In the light of the above statements, choose the correct answer from the options given below :

- (1) Both (A) and (R) are true and (R) is the correct explanation of (A)
- (2) Both (A) and (R) are true but (R) is NOT the correct explanation of (A)
- (3) (A) is true but (R) is false
- (4) (A) is false but (R) is true

**Options :**

- 19088951457. 1
- 19088951458. 2
- 19088951459. 3
- 19088951460. 4

**Question Number : 31 Question Id : 19088912892 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which among the following is an example of sparkling wine?

- |               |              |
|---------------|--------------|
| (1) Port Wine | (2) Sherry   |
| (3) Champagne | (4) Red wine |

**Options :**

19088951461. 1

19088951462. 2

19088951463. 3

19088951464. 4

**Question Number : 32 Question Id : 19088912893 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Maximum heat damage occur during the \_\_\_\_\_ of drying.

- |                         |                          |
|-------------------------|--------------------------|
| (1) Falling Rate Period | (2) Constant Rate Period |
| (3) Come-up Period      | (4) Post drying stage    |

**Options :**

19088951465. 1

19088951466. 2

19088951467. 3

19088951468. 4

**Question Number : 33 Question Id : 19088912894 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which among the following is absent in cocoa butter?

- |                   |                 |
|-------------------|-----------------|
| (1) Palmitic acid | (2) Oleic acid  |
| (3) Stearic acid  | (4) Lauric acid |

**Options :**

19088951469. 1

19088951470. 2

19088951471. 3

19088951472. 4

**Question Number : 34 Question Id : 19088912895 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which among the following is the reduced form of myoglobin?

(1) Oxymyoglobin

(2) Metmyoglobin

(3) Oxygenated myoglobin

(4) Deoxymyoglobin

**Options :**

19088951473. 1

19088951474. 2

19088951475. 3

19088951476. 4

**Question Number : 35 Question Id : 19088912896 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Extensive heating of starchy rich food material may leads to the formation of \_\_\_\_\_.

(1) Resistant starch

(2) Histamine

(3) Acrylamide

(4) Waxy starch

**Options :**

19088951477. 1

19088951478. 2

19088951479. 3

19088951480. 4

**Question Number : 36 Question Id : 19088912897 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which among the following is not a reconstitution property of milk powder?

- |                   |                    |
|-------------------|--------------------|
| (1) Sinkability   | (2) Wettability    |
| (3) Agglomeration | (4) Dispersibility |

**Options :**

19088951481. 1

19088951482. 2

19088951483. 3

19088951484. 4

**Question Number : 37 Question Id : 19088912898 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Match List I with List II

| List I                      | List II    |
|-----------------------------|------------|
| (A) Malolactic Fermentation | (I) Bread  |
| (B) Pitching                | (II) Wine  |
| (C) Dextrinization          | (III) Meat |
| (D) Stunning                | (IV) Beer  |

Choose the correct answer from the options given below :

- (1) (A)-(IV), (B)-(I), (C)-(III), (D)-(II)
- (2) (A)-(II), (B)-(I), (C)-(III), (D)-(IV)
- (3) (A)-(II), (B)-(IV), (C)-(I), (D)-(III)
- (4) (A)-(III), (B)-(IV), (C)-(I), (D)-(II)

**Options :**

19088951485. 1

19088951486. 2

19088951487. 3

19088951488. 4

**Question Number : 38 Question Id : 19088912899 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements : One is labelled as Assertion (A) and the other is labelled as Reason (R).

Assertion (A) : Cake flour is often subjected to chlorination to improve the quality of cake.

Reason (R) : Chlorination bleaches the carotenoids of wheat flour, and impart whiteness. It also oxidizes flour starch which swells more on gelatinization.

In the light of the above statements, choose the correct answer from the options given below :

- (1) Both (A) and (R) are true and (R) is the correct explanation of (A)
- (2) Both (A) and (R) are true but (R) is NOT the correct explanation of (A)
- (3) (A) is true but (R) is false
- (4) (A) is false but (R) is true

**Options :**

19088951489. 1

19088951490. 2

19088951491. 3

19088951492. 4

**Question Number : 39 Question Id : 19088912900 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements : One is labelled as Assertion (A) and the other is labelled as Reason (R).

Assertion (A) : Fruits like mango are exposed to Vapour Heat Treatment (VHT) before export as quarantine measure.

Reason (R) : Exposure to vapour check the biosynthesis of ethylene and thus inhibit ripening process.

In the light of the above statements, choose the correct answer from the options given below :

- (1) Both (A) and (R) are true and (R) is the correct explanation of (A)
- (2) Both (A) and (R) are true but (R) is NOT the correct explanation of (A)
- (3) (A) is true but (R) is false
- (4) (A) is false but (R) is true

**Options :**

19088951493. 1

19088951494. 2

19088951495. 3

19088951496. 4

**Question Number : 40 Question Id : 19088912901 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Food emulsions exhibits \_\_\_\_\_ type of rheological behaviour.

- |                    |                      |
|--------------------|----------------------|
| (1) Newtonian      | (2) Rheopectic       |
| (3) Shear thinning | (4) Shear thickening |

**Options :**

19088951497. 1

19088951498. 2

19088951499. 3

19088951500. 4

**Question Number : 41 Question Id : 19088912902 Question Type : MCQ Option Shuffling : No**

**Correct Marks : 4 Wrong Marks : 1**

Average Magnesium (Mg) content of raw milk is about

- |                   |                    |
|-------------------|--------------------|
| (1) 1.2 mg/100 ml | (2) 12 mg/100 ml   |
| (3) 120 mg/100 ml | (4) 0.12 mg/100 ml |

**Options :**

19088951501. 1

19088951502. 2

19088951503. 3

19088951504. 4

**Question Number : 42 Question Id : 19088912903 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Volumetric method for detection of lactose in milk

- |                         |                           |
|-------------------------|---------------------------|
| (1) Lane-Eynon Method   | (2) Werner-Schimdt Method |
| (3) Polarimetric Method | (4) Rose-Gottleib Method  |

**Options :**

19088951505. 1

19088951506. 2

19088951507. 3

19088951508. 4

**Question Number : 43 Question Id : 19088912904 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Crude protein content of milk and milk product is calculated by multiplying nitrogen content with factor

- |          |          |
|----------|----------|
| (1) 6.25 | (2) 6.38 |
| (3) 6.30 | (4) 5.75 |

**Options :**

19088951509. 1

19088951510. 2

19088951511. 3

19088951512. 4

**Question Number : 44 Question Id : 19088912905 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Vacreation refers to

- |                           |                          |
|---------------------------|--------------------------|
| (1) Vaccum packaging      | (2) Vaccum sterilization |
| (3) Vaccum pasteurization | (4) Vaccuum creation     |

**Options :**

19088951513. 1

19088951514. 2

19088951515. 3

19088951516. 4

**Question Number : 45 Question Id : 19088912906 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

For selection of wavelength, spectrophotometer uses :

- |                   |                |
|-------------------|----------------|
| (1) Processor     | (2) Transducer |
| (3) Monochromator | (4) Slit       |

**Options :**

19088951517. 1

19088951518. 2

19088951519. 3

19088951520. 4

**Question Number : 46 Question Id : 19088912907 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Following product exhibit maximum heat induced changes

- |                              |                     |
|------------------------------|---------------------|
| (1) Sweetened Condensed Milk | (2) Evaporated milk |
| (3) Khoa                     | (4) Milk Powder     |

**Options :**

19088951521. 1

19088951522. 2

19088951523. 3

19088951524. 4

**Question Number : 47 Question Id : 19088912908 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Casein : Fat ratio is adjusted in cheese milk to

- |                 |                 |
|-----------------|-----------------|
| (1) 0.45 – 0.60 | (2) 0.68 – 0.70 |
| (3) 0.68 – 0.80 | (4) 0.60 – 0.70 |

**Options :**

19088951525. 1

19088951526. 2

19088951527. 3

19088951528. 4

**Question Number : 48 Question Id : 19088912909 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

During cheese making enzyme rennet acts on

- |                          |                     |
|--------------------------|---------------------|
| (1) $\alpha S_1$ -Casein | (2) $\beta$ -Casein |
| (3) $\alpha S_2$ -Casein | (4) K-Casein        |

19088951529. 1

19088951530. 2

19088951531. 3

19088951532. 4

**Question Number : 49 Question Id : 19088912910 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

For which of the water soluble vitamin milk is the only source for vegetarians

- |                |                    |
|----------------|--------------------|
| (1) Folic acid | (2) Cyanocobalamin |
| (3) Thiamin    | (4) Biotin         |

**Options :**

19088951533. 1

19088951534. 2

19088951535. 3

19088951536. 4

**Question Number : 50 Question Id : 19088912911 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

As per FSSAI, 2006, maximum free fatty acid content (% oleic acid) in ghee is

- |          |          |
|----------|----------|
| (1) 1.5% | (2) 3%   |
| (3) 2.5% | (4) 3.5% |

**Options :**

19088951537. 1

19088951538. 2

19088951539. 3

19088951540. 4

**Question Number : 51 Question Id : 19088912912 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The area of pipe at section XX' is  $315 \text{ cm}^2$ . The area of pipe at section YY' is twice the area of section XX'. The velocity at section XX' is  $4.5 \text{ m/sec}$ . Find the velocity at section YY'. Also determine flow rate through the pipe.

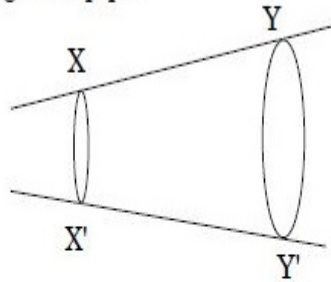


Fig. 1

- (1)  $V = 2.25 \text{ m/sec}$ ,  $Q = 0.14175 \text{ m}^3/\text{sec}$
- (2)  $V = 22.25 \text{ m/sec}$ ,  $Q = 0.14175 \text{ m}^3/\text{sec}$
- (3)  $V = 2.25 \text{ m/sec}$ ,  $Q = 1.4175 \text{ m}^3/\text{sec}$
- (4)  $V = 22.25 \text{ m/sec}$ ,  $Q = 1.4175 \text{ m}^3/\text{sec}$

**Options :**

- 19088951541. 1
- 19088951542. 2
- 19088951543. 3
- 19088951544. 4

**Question Number : 52 Question Id : 19088912913 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The thermal conductivity of frozen food is \_\_\_\_\_ than foods at normal temperature.

- (1) Lower
- (2) Higher
- (3) Same
- (4) Can not predict

**Options :**

- 19088951545. 1
- 19088951546. 2

19088951548. 4

**Question Number : 53 Question Id : 19088912914 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following arrangement could eliminate the use of pump between effects in evaporation?

- |                  |                                  |
|------------------|----------------------------------|
| (1) Forward feed | (2) Backward feed                |
| (3) Mixed feed   | (4) Its theoretically impossible |

**Options :**

19088951549. 1

19088951550. 2

19088951551. 3

19088951552. 4

**Question Number : 54 Question Id : 19088912915 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Ingress of oxygen into the package \_\_\_\_\_.

- (1) Decrease the activities of the enzymes
- (2) Increase the activities of the enzyme
- (3) No change in the activities of the enzyme
- (4) Initially increase followed by decrease in enzyme activity

**Options :**

19088951553. 1

19088951554. 2

19088951555. 3

19088951556. 4

**Question Number : 55 Question Id : 19088912916 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The heating mechanism of microwave processing is

- |                        |                      |
|------------------------|----------------------|
| (1) Dipole rotation    | (2) Infrared heating |
| (3) Ionic polarization | (4) Both (1) and (3) |

**Options :**

19088951557. 1

19088951558. 2

19088951559. 3

19088951560. 4

**Question Number : 56 Question Id : 19088912917 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The water sorption by a food is independent of \_\_\_\_\_.

- |                                    |                                           |
|------------------------------------|-------------------------------------------|
| (1) Composition                    | (2) Physico-chemical state of ingredients |
| (3) Physical structure of the food | (4) Exposure to light                     |

**Options :**

19088951561. 1

19088951562. 2

19088951563. 3

19088951564. 4

**Question Number : 57 Question Id : 19088912918 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

**Options :**

- 19088951565. 1
- 19088951566. 2
- 19088951567. 3
- 19088951568. 4

**Question Number : 58 Question Id : 19088912919 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The HTST process involves heating milk to

- |                     |                       |
|---------------------|-----------------------|
| (1) 62°C for 30 min | (2) 72°C for 15 sec   |
| (3) 65°C for 15 min | (4) 100°C for < 1 sec |

**Options :**

- 19088951569. 1
- 19088951570. 2
- 19088951571. 3
- 19088951572. 4

**Question Number : 59 Question Id : 19088912920 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is known as heart of the vapour compression refrigeration system?

- |               |                |
|---------------|----------------|
| (1) Condenser | (2) Evaporator |
| (3) Receiver  | (4) Compressor |

**Options :**

- 19088951573. 1
- 19088951574. 2
- 19088951575. 3

**Question Number : 60 Question Id : 19088912921 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What is the full form of PLC?

- |                                |                               |
|--------------------------------|-------------------------------|
| (1) Programmable Logo Control  | (2) Preventable Logic Control |
| (3) Programmable Logic Control | (4) Processed Linear Control  |

**Options :**

19088951577. 1

19088951578. 2

19088951579. 3

19088951580. 4

**Question Number : 61 Question Id : 19088912922 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Two agreement which are coming into force after Uruguay sound of multilateral Trade Negotiations are

- (A) TBT and SPS
- (B) TRIPS and SPS
- (C) GATT and WTO
- (D) TBT and GATT

Choose the most appropriate answer from the options given below :

- (1) (A) only
- (2) (B) only
- (3) (C) only
- (4) (D) only

**Options :**

19088951581. 1

19088951582. 2

19088951583. 3

19088951584. 4

**Question Number : 62 Question Id : 19088912923 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

A failure to meet quality requirement is known as

- (A) Conformity
- (B) Observation
- (C) Non-conformity
- (D) Unsatisfactory

Choose the most appropriate answer from the options given below :

- (1) (A) only
- (2) (B) only
- (3) (C) only
- (4) (D) only

**Options :**

19088951585. 1

19088951586. 2

19088951587. 3

19088951588. 4

**Question Number : 63 Question Id : 19088912924 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Faecal Indicator of milk is

- |                |                           |
|----------------|---------------------------|
| (1) Coliforms  | (2) Escherichia coli      |
| (3) Salmonella | (4) Enterococcus faecalis |

**Options :**

19088951589. 1

19088951590. 2

19088951591. 3

19088951592. 4

**Question Number : 64 Question Id : 19088912925 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Father of Medical Microbiology

- |                   |                          |
|-------------------|--------------------------|
| (1) Louis Pasteur | (2) Joseph Lister        |
| (3) Robert Koch   | (4) Anton Von Leewanhook |

**Options :**

19088951593. 1

19088951594. 2

19088951595. 3

19088951596. 4

**Question Number : 65 Question Id : 19088912926 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

ISO Standard for Food Safety is

- |               |               |
|---------------|---------------|
| (1) ISO 9001  | (2) ISO 22000 |
| (3) ISO 14001 | (4) ISO 17025 |

**Options :**

19088951597. 1

19088951598. 2

19088951599. 3

19088951600. 4

**Question Number : 66 Question Id : 19088912927 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Common activity test used for starter culture

- (A) Microscopic examination
- (B) Horrel Elliker test
- (C) Morphological examination
- (D) Growth on medium

Choose the most appropriate answer from the options given below :

- (1) (A) only
- (2) (B) only
- (3) (C) only
- (4) (D) only

**Options :**

19088951601. 1

19088951602. 2

19088951603. 3

19088951604. 4

**Question Number : 67 Question Id : 19088912928 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Father of Biosensor is

- (A) Leoland C Clark
- (B) Leoland F Clark
- (C) Biacore
- (D) Ferland

Choose the most appropriate answer from the options given below :

- (1) (A) only
- (2) (B) only
- (3) (C) only
- (4) (D) only

**Options :**

- 19088951605. 1
- 19088951606. 2
- 19088951607. 3
- 19088951608. 4

**Question Number : 68 Question Id : 19088912929 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the diseases are caused by *Coxiella burnetii*?

- (A) Tuberculosis
- (B) Brucellosis
- (C) 'Q' fever
- (D) Malta fever

Choose the most appropriate answer from the options given below

- (1) (A) only
- (2) (B) only
- (3) (C) only
- (4) (D) only

**Options :**

- 19088951609. 1
- 19088951610. 2
- 19088951611. 3
- 19088951612. 4

**Question Number : 69 Question Id : 19088912930 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Eijkmen test is used for the detection of

- (A) Coliforms
- (B) Coliphages
- (C) E. coli
- (D) Enterococci

Choose the most appropriate answer from the options given below :

- (1) (A) only
- (2) (B) only
- (3) (C) only
- (4) (D) only

**Options :**

19088951613. 1

19088951614. 2

19088951615. 3

19088951616. 4

**Question Number : 70 Question Id : 19088912931 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Pathogenic bacteria major concern in sweetened condensed milk

- (A) E. coli
- (B) Listeria monocytogenes
- (C) Staphylococcus aureus
- (D) Campylobacter jejuni

Choose the most appropriate answer from the options given below :

- (1) (A) only
- (2) (B) only
- (3) (C) only
- (4) (D) only

**Options :**

19088951617. 1

19088951618. 2

19088951619. 3

19088951620. 4

## Part C : Dairy Engineering

|                                                              |           |
|--------------------------------------------------------------|-----------|
| Section Id :                                                 | 190889265 |
| Section Number :                                             | 3         |
| Section type :                                               | Online    |
| Mandatory or Optional :                                      | Mandatory |
| Number of Questions :                                        | 50        |
| Number of Questions to be attempted :                        | 50        |
| Section Marks :                                              | 200       |
| Enable Mark as Answered Mark for Review and Clear Response : | Yes       |
| Sub-Section Number :                                         | 1         |
| Sub-Section Id :                                             | 190889305 |
| Question Shuffling Allowed :                                 | Yes       |

**Question Number : 71 Question Id : 19088912932 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In which of the following pump, priming is an essential operation?

- |                        |                      |
|------------------------|----------------------|
| (1) Reciprocating pump | (2) Centrifugal pump |
| (3) Diaphragm pump     | (4) Air lift pump    |

**Options :**

19088951621. 1

19088951622. 2

19088951623. 3

19088951624. 4

**Question Number : 72 Question Id : 19088912933 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is not a test for viscoelastic characterization of material?

- |                             |                                    |
|-----------------------------|------------------------------------|
| (1) Stress-Strain behaviour | (2) Dynamic test                   |
| (3) Burger's test           | (4) Method of successive residuals |

**Options :**

19088951625. 1

19088951626. 2

19088951627. 3

19088951628. 4

**Question Number : 73 Question Id : 19088912934 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Match the List I with List II

| List I                       | List II     |
|------------------------------|-------------|
| (A) Elastic                  | (I) Water   |
| (B) Plastic                  | (II) Dough  |
| (C) Viscous                  | (III) Steel |
| (D) Generalized Maxwell body | (IV) Butter |

Choose the correct answer from the options given below :

- (1) (A)-(III), (B)-(IV), (C)-(I), (D)-(II)
- (2) (A)-(II), (B)-(III), (C)-(IV), (D)-(I)
- (3) (A)-(I), (B)-(II), (C)-(IV), (D)-(III)
- (4) (A)-(I), (B)-(IV), (C)-(II), (D)-(III)

Options :

19088951629. 1

19088951630. 2

19088951631. 3

19088951632. 4

Question Number : 74 Question Id : 19088912935 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Boundary layers of fluid is when all the fluid elements having \_\_\_\_\_ velocities which are \_\_\_\_\_ with thickness.

- (1) Same, increasing
- (2) Same, decreasing
- (3) Different, Decreasing
- (4) Different, Increasing

Options :

19088951633. 1

19088951634. 2

19088951635. 3

19088951636. 4

Question Number : 75 Question Id : 19088912936 Question Type : MCQ Option Shuffling : No

**Correct Marks : 4 Wrong Marks : 1**

In case of turbulent flow, the fluid particles

- (1) Move in all directions and at all angles
- (2) No longer travel in layers
- (3) Mix laterally at higher velocities
- (4) (1), (2) and (3)

**Options :**

19088951637. 1

19088951638. 2

19088951639. 3

19088951640. 4

**Question Number : 76 Question Id : 19088912937 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is not a characteristics of freeze dehydration?

- (1) Moisture loss by sublimation from boundary of ever receding ice-crystal zone
- (2) Temperatures used is sufficiently low to prevent thawing
- (3) Continuous process
- (4) Porous structure is developed in dried product

**Options :**

19088951641. 1

19088951642. 2

19088951643. 3

19088951644. 4

**Question Number : 77 Question Id : 19088912938 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Freezing point depression is due to

- |                    |                          |
|--------------------|--------------------------|
| (1) Cooling effect | (2) Concentration effect |
| (3) Latent effect  | (4) Thawing effect       |

**Options :**

19088951645. 1

19088951646. 2

19088951647. 3

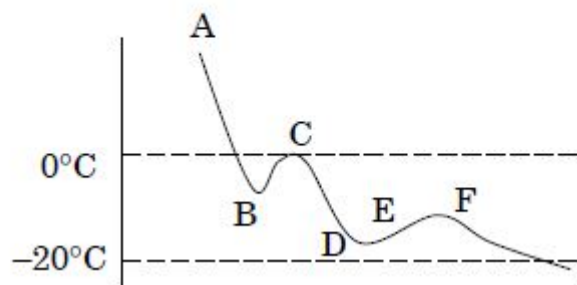
19088951648. 4

**Question Number : 78 Question Id : 19088912939 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In the following freezing curve, the point B denote



- |                                       |
|---------------------------------------|
| (1) Precooling of fluid               |
| (2) Supercooling of fluid             |
| (3) Subcooling of fluid               |
| (4) Start of phase change of material |

**Options :**

19088951649. 1

19088951650. 2

19088951651. 3

19088951652. 4

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Drying process in a spray dryer takes place in

- |                                    |                                    |
|------------------------------------|------------------------------------|
| (1) Constant drying rate period    | (2) 1st falling drying rate period |
| (3) 2nd falling drying rate period | (4) 3rd falling rate period        |

**Options :**

19088951653. 1

19088951654. 2

19088951655. 3

19088951656. 4

**Question Number : 80 Question Id : 19088912941 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The advantage of falling film evaporators are

- (A) Less residence time
- (B) More overall heat transfer coefficient
- (C) Less fouling problem
- (D) Low vacuum is possible

Choose the correct answer from the options given below :

- (1) (A), (B) and (C) only
- (2) (B), (C) and (D) only
- (3) (A), (C) and (D) only
- (4) (A), (B) and (D) only

**Options :**

19088951657. 1

19088951658. 2

19088951659. 3

19088951660. 4

**Question Number : 81 Question Id : 19088912942 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Steam economy of single stage evaporator is about

- |                |               |
|----------------|---------------|
| (1) 0.9 – 0.98 | (2) 1.9 – 2.0 |
| (3) 2.9 – 3.0  | (4) 3.9 – 4.0 |

**Options :**

19088951661. 1

19088951662. 2

19088951663. 3

19088951664. 4

**Question Number : 82 Question Id : 19088912943 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

As the evaporation progress, which of the following changes in liquid characteristics occur?

- (1) Rise in Boiling point
- (2) Decrease in viscosity
- (3) Rise in Boiling point and decrease in viscosity
- (4) Rise in Boiling point and increase in viscosity

**Options :**

19088951665. 1

19088951666. 2

19088951667. 3

19088951668. 4

**Question Number : 83 Question Id : 19088912944 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is Calendria evaporator?

- |                                    |                           |
|------------------------------------|---------------------------|
| (1) Short tube vertical evaporator | (2) Plate type evaporator |
| (3) Vacuum pan                     | (4) SSHE evaporator       |

**Options :**

19088951669. 1

19088951670. 2

19088951671. 3

19088951672. 4

**Question Number : 84 Question Id : 19088912945 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

During fluidized bed drying, post-incipient fluidization, the pressure briefly \_\_\_\_\_.

- |                    |                          |
|--------------------|--------------------------|
| (1) Increases      | (2) Decreases            |
| (3) Stays constant | (4) Varies exponentially |

**Options :**

19088951673. 1

19088951674. 2

19088951675. 3

19088951676. 4

**Question Number : 85 Question Id : 19088912946 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following can not take feed in the form of pastes or slurries?

- |                     |                 |
|---------------------|-----------------|
| (1) Tray dryer      | (2) Drum dryer  |
| (3) Pneumatic dryer | (4) Spray dryer |

**Options :**

19088951677. 1

19088951678. 2

19088951679. 3

19088951680. 4

**Question Number : 86 Question Id : 19088912947 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Driving force for solid-liquid separation through microfiltration is

- |                            |                                  |
|----------------------------|----------------------------------|
| (1) Pressure difference    | (2) Concentration difference     |
| (3) Temperature difference | (4) Difference in water activity |

**Options :**

19088951681. 1

19088951682. 2

19088951683. 3

19088951684. 4

**Question Number : 87 Question Id : 19088912948 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In the 'region-1' of moisture sorption isotherm, water is bound to

- |                                    |                                    |
|------------------------------------|------------------------------------|
| (1) Ionic groups                   | (2) Multilayer bonding to proteins |
| (3) Multilayer bonding to starches | (4) It is unbound water            |

**Options :**

19088951685. 1

19088951686. 2

19088951687. 3

19088951688. 4

**Question Number : 88 Question Id : 19088912949 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Find the saturated humidity of the air at 30°C. Given that the saturation pressure of water at 30°C is 4.24 kN/m<sup>2</sup>

- (1) 0.072 kg of moisture/kg of dry air      (2) 0.027 kg of moisture/kg of dry air  
(3) 0.0176 kg of moisture/kg of dry air      (4) 0.176 kg of moisture/kg of dry air

**Options :**

19088951689. 1

19088951690. 2

19088951691. 3

19088951692. 4

**Question Number : 89 Question Id : 19088912950 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is never used in the water activity measurement?

- (1) Microwave heating  
(2) Saturated salt solutions  
(3) Chilled mirror dew point technique  
(4) Proximity equilibrium cell

**Options :**

19088951693. 1

19088951694. 2

19088951695. 3

19088951696. 4

**Question Number : 90 Question Id : 19088912951 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In the microwave heating system, Electro-magnetic wave of microwave range can be generated by

- |                  |               |
|------------------|---------------|
| (1) Klystron     | (2) Magnetron |
| (3) Triode valve | (4) Cyclotron |

**Options :**

19088951697. 1

19088951698. 2

19088951699. 3

19088951700. 4

**Question Number : 91 Question Id : 19088912952 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The depth of penetration of microwave energy at 915 MHz is \_\_\_\_\_ as compared to that of microwave energy at 2450 Hz.

- |          |                  |
|----------|------------------|
| (1) Less | (2) More         |
| (3) Same | (4) Less or same |

**Options :**

19088951701. 1

19088951702. 2

19088951703. 3

19088951704. 4

**Question Number : 92 Question Id : 19088912953 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following gas has higher permeability coefficient?

- |                    |                     |
|--------------------|---------------------|
| (1) O <sub>2</sub> | (2) CO <sub>2</sub> |
| (3) N <sub>2</sub> | (4) Water vapour    |

**Options :**

19088951705. 1

19088951706. 2

19088951707. 3

19088951708. 4

**Question Number : 93 Question Id : 19088912954 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Henry's law relates

- (1) The partial pressure of oxygen and the saturation concentration of oxygen in the liquid
- (2) The oxygen transfer rate and the bubble size
- (3) The oxygen transfer rate and temperature
- (4) The oxygen transfer rate to the partial pressure of oxygen in the liquid

**Options :**

19088951709. 1

19088951710. 2

19088951711. 3

19088951712. 4

**Question Number : 94 Question Id : 19088912955 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Temperature profile in steady state heat transfer is

- |                |                |
|----------------|----------------|
| (1) Asymptotic | (2) Hyperbolic |
| (3) Parabolic  | (4) Linear     |

**Options :**

19088951713. 1

19088951714. 2

19088951715. 3

19088951716. 4

**Question Number : 95 Question Id : 19088912956 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

If the value of heat convection coefficient, ' $h$ ' over a plate of area  $1\text{ m}^2$  is  $10\text{ W/m}^2\text{-K}$  and the temperature difference between plate and surrounding is  $10\text{ K}$ , the convection heat transfer rate will be

- |               |                  |
|---------------|------------------|
| (1) 10 W      | (2) 0.1 KJ/Sec   |
| (3) 100 W-Sec | (4) 0.1 Watt-Sec |

**Options :**

19088951717. 1

19088951718. 2

19088951719. 3

19088951720. 4

**Question Number : 96 Question Id : 19088912957 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

LMTD in case of counter flow heat exchanger as compared to parallel flow heat exchanger is

- |            |                                       |
|------------|---------------------------------------|
| (1) Higher | (2) Lower                             |
| (3) Same   | (4) Depends on area of heat exchanger |

**Options :**

19088951721. 1

19088951722. 2

19088951723. 3

19088951724. 4

**Question Number : 97 Question Id : 19088912958 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

In plate heat exchanger used for milk pasteurization the pressure of the pasteurized milk is kept higher than that of the heating or cooling medium to

- (1) Avoid leakage of milk through plates
- (2) Get better heat transfer
- (3) Save heat energy
- (4) Avoid contamination with heating or cooling medium

**Options :**

19088951725. 1

19088951726. 2

19088951727. 3

19088951728. 4

**Question Number : 98 Question Id : 19088912959 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Match the following List I with List II

| List I                                                                                | List II              |
|---------------------------------------------------------------------------------------|----------------------|
| (A) Inertia force / Viscous force                                                     | (I) Peclet number    |
| (B) $\frac{\text{Heat flow rate by convection}}{\text{Heat flow rate by conduction}}$ | (II) Grashof number  |
| (C) $\frac{\text{Buoyant force}}{\text{Inertia force}}$                               | (III) Reynold number |

Choose the correct answer from the options given below :

- (1) (A)-(I), (B)-(III), (C)-(II)
- (2) (A)-(III), (B)-(II), (C)-(I)
- (3) (A)-(III), (B)-(I), (C)-(II)
- (4) (A)-(II), (B)-(I), (C)-(III)

**Options :**

19088951729. 1

19088951730. 2

19088951731. 3

19088951732. 4

**Question Number : 99 Question Id : 19088912960 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In convection heat transfer, the film temperature at which the fluid properties are to be determined is given by

- |                          |                          |
|--------------------------|--------------------------|
| (1) $2(T_s + T_\infty)$  | (2) $(T_s + T_\infty)/2$ |
| (3) $(T_s - T_\infty)/2$ | (4) $2(T_s - T_\infty)$  |

**Options :**

- 19088951733. 1
- 19088951734. 2
- 19088951735. 3
- 19088951736. 4

**Question Number : 100 Question Id : 19088912961 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

\_\_\_\_\_ chart is known as transient heat conduction chart.

- |                   |                   |
|-------------------|-------------------|
| (1) Heisler Chart | (2) Cox Chart     |
| (3) Mollier Chart | (4) Duhring Chart |

**Options :**

- 19088951737. 1
- 19088951738. 2
- 19088951739. 3
- 19088951740. 4

**Question Number : 101 Question Id : 19088912962 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

A good control system has all of the following features except

- |                   |                    |
|-------------------|--------------------|
| (1) Slow response | (2) Good stability |
| (3) Good accuracy | (4) Less error     |

**Options :**

19088951741. 1

19088951742. 2

19088951743. 3

19088951744. 4

**Question Number : 102 Question Id : 19088912963 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What is the flux of a membrane filter if it contains 75 sq.ft. of filter area and operates from 24 hour at a flow rate of 5 gallon/min? Assume that the water temperature is 20°C.

- |                           |                          |
|---------------------------|--------------------------|
| (1) 100 gallon/sq.ft./day | (2) 96 gallon/sq.ft./day |
| (3) 56 gallon/sq.ft./day  | (4) 98 gallon/sq.ft./day |

**Options :**

19088951745. 1

19088951746. 2

19088951747. 3

19088951748. 4

**Question Number : 103 Question Id : 19088912964 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

\_\_\_\_\_ head is most economical for cylindrical vessels designed for operating at high pressure (>15 atm).

- |                   |             |
|-------------------|-------------|
| (1) Hemispherical | (2) Dished  |
| (3) Ellipsoidal   | (4) Conical |

**Options :**

19088951749. 1

19088951750. 2

19088951751. 3

19088951752. 4

**Question Number : 104 Question Id : 19088912965 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The number and size of silo tanks in a dairy plant depend on which of the following?

- (A) Milk intake/day
- (B) No. of days per working week
- (C) No. of hours per working week
- (D) Types of product manufactured

Choose the correct answer from the options given below :

- (1) (A) and (B) only
- (2) (C) and (D) only
- (3) (B) and (C) only
- (4) (A), (B), (C) and (D) only

**Options :**

19088951753. 1

19088951754. 2

19088951755. 3

19088951756. 4

**Question Number : 105 Question Id : 19088912966 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

UFPV stands for

- |                                   |                              |
|-----------------------------------|------------------------------|
| (1) Uniform Force Pressure Vessel | (2) Unfired Pressure Vessel  |
| (3) Unified Fixed Pressure Vessel | (4) Unfilled Pressure Vessel |

**Options :**

19088951757. 1

19088951758. 2

19088951759. 3

19088951760. 4

**Question Number : 106 Question Id : 19088912967 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Providing dished type head instead of flat head is a corrosion control method of

- (1) Material selection
- (2) Anodic and Cathodic protection
- (3) Engineering design of component
- (4) Control of process environment

**Options :**

19088951761. 1

19088951762. 2

19088951763. 3

19088951764. 4

**Question Number : 107 Question Id : 19088912968 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following can be used for vessel inspection and test?

- |                                        |                 |
|----------------------------------------|-----------------|
| (1) Static electric discharge          | (2) Drilling    |
| (3) Halogen-Freon gas and halide torch | (4) Impact test |

**Options :**

19088951765. 1

19088951766. 2

19088951767. 3

19088951768. 4

**Question Number : 108 Question Id : 19088912969 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which grade of stainless steel is known as acid proof steel?

- |              |              |
|--------------|--------------|
| (1) AISI 304 | (2) SIS 2333 |
| (3) AISI 316 | (4) SIS 2359 |

**Options :**

19088951769. 1

19088951770. 2

19088951771. 3

19088951772. 4

**Question Number : 109 Question Id : 19088912970 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The method of design of pressure vessel are primarily based on

- |                          |                      |
|--------------------------|----------------------|
| (1) Elastic analysis     | (2) Thermal analysis |
| (3) Shear force analysis | (4) Factor of safety |

**Options :**

19088951773. 1

19088951774. 2

19088951775. 3

19088951776. 4

**Question Number : 110 Question Id : 19088912971 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Specification for shell and tube heat exchanger are given in

(1) IS-4503

(2) IS-803

(3) IS-2825-1969

(4) IS-4049-1971

**Options :**

19088951777. 1

19088951778. 2

19088951779. 3

19088951780. 4

**Question Number : 111 Question Id : 19088912972 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The device used for cooling the refrigerant in a vapour absorption chillar is a

(1) Vacuum pump

(2) Condenser

(3) Vacuum condenser

(4) Evaporator

**Options :**

19088951781. 1

19088951782. 2

19088951783. 3

19088951784. 4

**Question Number : 112 Question Id : 19088912973 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The heat pump is used for residence to supply 16000 kcal/h of heat. The pump has a coefficient of performance of 3 when outdoor temp is 7°C and room temp is 21°C. Under these conditions, the condenser and evaporator coil temperatures are maintained at 30°C and 5°C. Compute the power required in kW when the motor compressor efficiency is 0.8.

- |          |          |
|----------|----------|
| (1) 5.82 | (2) 5.28 |
| (3) 6.80 | (4) 6.82 |

**Options :**

- 19088951785. 1
- 19088951786. 2
- 19088951787. 3
- 19088951788. 4

**Question Number : 113 Question Id : 19088912974 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In the dairy industry, chilled water supply is maintained by

- |                 |                  |
|-----------------|------------------|
| (1) Cold stores | (2) BMC          |
| (3) IBT         | (4) Storage tank |

**Options :**

- 19088951789. 1
- 19088951790. 2
- 19088951791. 3
- 19088951792. 4

**Question Number : 114 Question Id : 19088912975 Question Type : MCQ Option Shuffling : No**  
**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The specific humidity of air during evaporative cooling process with re-circulated water spray in a desert cooler \_\_\_\_\_.

- |                  |                   |
|------------------|-------------------|
| (1) Increases    | (2) Decreases     |
| (3) Remains same | (4) Unpredictable |

**Options :**

19088951793. 1

19088951794. 2

19088951795. 3

19088951796. 4

**Question Number : 115 Question Id : 19088912976 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In an absorption type refrigerator, the heat is supplied to  $\text{NH}_3$  generator by condensing steam at  $2 \text{ kg/cm}^2$  and 90% dry. The temperature to be maintained in the refrigerator is  $5^\circ\text{C}$ . The temperature of the atmosphere is  $30^\circ\text{C}$ . Find out the maximum possible COP of the refrigerator.

Given saturation temperature of steam at 2 atm is  $119^\circ\text{C}$

- |          |          |
|----------|----------|
| (1) 1.75 | (2) 2.75 |
| (3) 1.25 | (4) 3.50 |

**Options :**

19088951797. 1

19088951798. 2

19088951799. 3

19088951800. 4

**Question Number : 116 Question Id : 19088912977 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In a vapour compression refrigeration system, the compressor is required to increase the pressure of refrigerant so that

- (1) Its saturation temperature becomes greater than refrigeration temp
- (2) Its saturation temperature becomes greater than atmospheric temperature
- (3) Its saturation temperature becomes less than refrigeration temp.
- (4) Its saturation temperature becomes less than atmospheric temperature

**Options :**

19088951801. 1

19088951802. 2

19088951803. 3

19088951804. 4

**Question Number : 117 Question Id : 19088912978 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

During compression of refrigerant

- |                                  |                                      |
|----------------------------------|--------------------------------------|
| (1) Enthalpy remains constant    | (2) Entropy remains constant         |
| (3) Temperature remains constant | (4) Specific volume remains constant |

**Options :**

19088951805. 1

19088951806. 2

19088951807. 3

19088951808. 4

**Question Number : 118 Question Id : 19088912979 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The minimum value of input below which no output can be detected is the

- |                     |                 |
|---------------------|-----------------|
| (1) Minimum value   | (2) Threshold   |
| (3) Error in signal | (4) Sensitivity |

**Options :**

19088951809. 1

19088951810. 2

19088951811. 3

19088951812. 4

**Question Number : 119 Question Id : 19088912980 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

LVDT contains

- |                |               |
|----------------|---------------|
| (1) One coil   | (2) Two coil  |
| (3) Three coil | (4) Four coil |

**Options :**

19088951813. 1

19088951814. 2

19088951815. 3

19088951816. 4

**Question Number : 120 Question Id : 19088912981 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

### Options :

19088951817. 1

19088951818. 2

19088951819. 3

19088951820. 4