

35 Food Processing Technology ICAR SEPT 2022

Topic:- GEN KNOW COMMON PHD

1) Colour of the tag used on certified seed bags is[Question ID = 16958][Question Description = 101_221_GKD_SEP22_Q01]

1. Blue [Option ID = 37829]
2. Purple [Option ID = 37830]
3. White [Option ID = 37831]
4. Golden Yellow [Option ID = 37832]

2) Following are the statements regarding the Usar soil -

- A. It is reclaimed by adding lime.
- B. This soil has pH more than seven.
- C. Paddy crop can be grown in this soil.

Choose the *correct* answer from the options given below:

[Question ID = 16959][Question Description = 102_221_GKD_SEP22_Q02]

1. A and B only [Option ID = 37833]
2. B and C only [Option ID = 37834]
3. C only [Option ID = 37835]
4. A only [Option ID = 37836]

3) When total utility of a commodity increases, marginal utility will be

[Question ID = 16960][Question Description = 103_221_GKD_SEP22_Q03]

1. Negative but increasing
[Option ID = 37837]
2. Positive but decreasing
[Option ID = 37838]
3. Constant
[Option ID = 37839]
4. Either positive or negative
[Option ID = 37840]

4) Where is the headquarter of International Fund for Agriculture Development located?

[Question ID = 16961][Question Description = 104_221_GKD_SEP22_Q04]

1. Vienna, Austria
[Option ID = 37841]
2. Rome, Italy
[Option ID = 37842]
3. New York, USA
[Option ID = 37843]
4. Berlin, Germany
[Option ID = 37844]

5) Mid-Oceanic Ridges are one of the important divisions of the ocean floor. In this respect, point out the incorrect statement regarding the 'Mid-Oceanic Ridges'. [Question ID = 16962][Question Description = 105_221_GKD_SEP22_Q05]

1. It is the largest mountain chain on the surface of the earth [Option ID = 37845]
2. It is a series of interconnected chain within the ocean. [Option ID = 37846]
3. It is characterised by a central rift system [Option ID = 37847]
4. The rift system at the crest is the zone of very low volcanic activity. [Option ID = 37848]

6) Consider the following facts about the union territory of India and point out the one which is incorrect in relation to union territory. [Question ID = 16963][Question Description = 106_221_GKD_SEP22_Q06]

1. These are the areas under the direct control of central government. [Option ID = 37849]
2. Also known as the 'centrally administered territories. [Option ID = 37850]

3. These territories constitute a conspicuous departure from the unitary feature of India. [Option ID = 37851]
4. There is no uniformity in their administrative systems. [Option ID = 37852]

7) Variety of flora and fauna are found in the different types of forest in India. In this regard, species of trees like teak, *sal shisham*, *sandalwood*, etc. are found in which of the following type of forests in India?[Question ID = 16964][Question Description = 107_221_GKD_SEP22_Q07]

1. Tropical evergreen forests [Option ID = 37853]
2. Tropical thorn forests [Option ID = 37854]
3. Tropical deciduous forests [Option ID = 37855]
4. Montane forests [Option ID = 37856]

8) The Marginal Preference Theory of consumption behaviour was proposed by

[Question ID = 16965][Question Description = 108_221_GKD_SEP22_Q08]

1. Armstrong
[Option ID = 37857]
2. J.K.Hicks
[Option ID = 37858]
3. Neumann
[Option ID = 37859]
4. Edmund Cannon
[Option ID = 37860]

9) Point out the incorrect statements regarding the service sector in India.[Question ID = 16966][Question Description = 109_221_GKD_SEP22_Q09]

1. It is the highest contributor to GDP [Option ID = 37861]
2. It requires skilled labour [Option ID = 37862]
3. It is the fastest growing sector [Option ID = 37863]
4. It is restricted to very few sectors. [Option ID = 37864]

10) Consider the statements regarding the agriculture sector in India and point out the incorrect statement.[Question ID = 16967][Question Description = 110_221_GKD_SEP22_Q10]

1. Agriculture sector is the largest employer of workforce [Option ID = 37865]
2. It has contributed to the Gross Value Added (GVA) [Option ID = 37866]
3. Growth in allied sectors is the major drivers of overall growth in the sector. [Option ID = 37867]
4. Minimum Support Price (MSP) policy is used as to promote crop uniformity. [Option ID = 37868]

11) In case of related goods, the cross elasticity of demand is[Question ID = 16968][Question Description = 111_221_GKD_SEP22_Q11]

1. Low [Option ID = 37869]
2. High [Option ID = 37870]
3. Zero [Option ID = 37871]
4. Unity [Option ID = 37872]

12) With reference to organic farming in India, consider the following statements :

- A. The National Programme for Organic Production' (NPOP) is operated under the guidelines and directions of the Union Ministry of Rural Development.
- B. The Agricultural and Processed Food Products Export Development Authority' (APEDA) functions as the Secretariat for the implementation of NPOP.
- C. Sikkim has become India's first fully organic state.

Choose the *correct* answer from the options given below:

[Question ID = 16969][Question Description = 112_221_GKD_SEP22_Q12]

1. A and B only
[Option ID = 37873]
2. B and C only
[Option ID = 37874]
3. C only
[Option ID = 37875]
4. A, B and C

[Option ID = 37876]

13) With reference to the circumstances in Indian agriculture, the concept of "Conservation Agriculture" assumes significance. Which of the following falls under the Conservation Agriculture ?

- A. Avoiding the monoculture practices.
- B. Adopting minimum tillage.
- C. Avoiding the cultivation of plantation crops.
- D. Using crop residues to cover soil surface.
- E. Adopting spatial and temporal crop sequencing/ crop rotations.

Choose the *correct* answer from the options given below:

[Question ID = 16970][Question Description = 113_221_GKD_SEP22_Q13]

- 1. A, C and D only [Option ID = 37877]
- 2. B, C, D and E only [Option ID = 37878]
- 3. B, D and E only [Option ID = 37879]
- 4. A, B, C and E only [Option ID = 37880]

14) Consumers are likely to get a variety of goods in which kind of market competition[Question ID = 16971][Question Description = 114_221_GKD_SEP22_Q14]

- 1. Monopoly [Option ID = 37881]
- 2. Duopoly [Option ID = 37882]
- 3. Oligopoly [Option ID = 37883]
- 4. Monopolistic [Option ID = 37884]

15) What is the correct chronological order of the following laws enacted for the conservation and protection of environment ?

- A. Environment (Protection) Act.
- B. Water (Prevention & Control of Pollution) Act.
- C. Air (Prevention & Control of pollution) Act.
- D. National Green Tribunal Act.

Choose the *correct* answer from the options given below:

[Question ID = 16972][Question Description = 115_221_GKD_SEP22_Q15]

- 1. B, C, A, D [Option ID = 37885]
- 2. A, B, C, D [Option ID = 37886]
- 3. C, B, A, D [Option ID = 37887]
- 4. D, C, B, A [Option ID = 37888]

16) The scientific study of soil is[Question ID = 16973][Question Description = 116_221_GKD_SEP22_Q16]

- 1. Earth Study [Option ID = 37889]
- 2. Soil Science [Option ID = 37890]
- 3. Pedology [Option ID = 37891]
- 4. Soil Chemistry [Option ID = 37892]

17) *Triticum aestivum*, the common bread wheat is -

[Question ID = 16974][Question Description = 117_221_GKD_SEP22_Q17]

- 1. Tetraploid

[Option ID = 37893]

- 2. Hexaploid

[Option ID = 37894]

- 3. Haploid

[Option ID = 37895]

- 4. Diploid

[Option ID = 37896]

18) Sectoral inflation refers to[Question ID = 16975][Question Description = 118_221_GKD_SEP22_Q18]

- 1. Running inflation [Option ID = 37897]

2. Comprehensive inflation [Option ID = 37898]
3. Sporadic inflation [Option ID = 37899]
4. Creeping inflation [Option ID = 37900]

19) Keynes Liquidity trap refers to[Question ID = 16976][Question Description = 119_221_GKD_SEP22_Q19]

1. Speculative demand for money [Option ID = 37901]
2. Transactions motive of money is inelastic [Option ID = 37902]
3. Precautionary motive of money is inelastic [Option ID = 37903]
4. Transactions motive of money is constant [Option ID = 37904]

20) A business is solvent if[Question ID = 16977][Question Description = 120_221_GKD_SEP22_Q20]

1. Total receipts exceed total expenditures [Option ID = 37905]
2. Total debt exceeds total equity [Option ID = 37906]
3. Total sales exceed total cash expense [Option ID = 37907]
4. Total assets exceed total liabilities [Option ID = 37908]

Topic:- Dairy Sci n Dairy Tech Food Tech_PHD

1) Match List I with List II

| List I | List II |
|----------------------|---------------------------|
| (Name of the cheese) | (Category of the cheese) |
| A. Cheddar | I. Acid coagulated cheese |
| B. Mozzarella | II. Whey cheese |
| C. Quarg | III. Hard cheese |
| D. Ricotta | IV. Pasta filata |

Choose the correct answer from the options given below:

[Question ID = 4451][Question Description = 101_50_DAI_SEP22_Q01]

1. A - III, B - IV, C - II, D - I [Option ID = 17801]
2. A - III, B - IV, C - I, D - II [Option ID = 17802]
3. A - II, B - III, C - I, D - IV [Option ID = 17803]
4. A - I, B - II, C - III, D - IV [Option ID = 17804]

2) Arrange the following membrane processes in the order of increasing pore size of the membranes used in these processes.

- A. MF
- B. NF
- C. RO
- D. UF

Choose the *correct* answer from the options given below

[Question ID = 4452][Question Description = 102_50_DAI_SEP22_Q02]

1. A, B, C, D [Option ID = 17805]
2. D, C, B, A [Option ID = 17806]
3. A, D, B, C [Option ID = 17807]
4. A, D, C, B [Option ID = 17808]

3) Human milk contains more _____ as compared to bovine milk.[Question ID = 4453][Question Description = 103_50_DAI_SEP22_Q03]

1. whey proteins [Option ID = 17809]
2. B-Casein [Option ID = 17810]
3. α_{s1} -Casein [Option ID = 17811]
4. κ -Casein [Option ID = 17812]

4) Given below are two statements, one is labelled as Assertion A and the other is labelled as Reason R

Assertion A: Fat destabilization during ice cream freezing facilitates air cells stability

Reason R: Absorption of emulsifiers on the surface of fat globule membrane

In light of the above statements, choose the *most appropriate* answer from the options given below:

[Question ID = 4454][Question Description = 104_50_DAI_SEP22_Q04]

1. Both A and R are correct and R is the correct explanation of A [Option ID = 17813]

2. Both A and R are correct but R is NOT the correct explanation of A [Option ID = 17814]
3. A is correct but R is not correct [Option ID = 17815]
4. A is not correct but R is correct [Option ID = 17816]

5) Maximum temperature to which milk particles are exposed during spray drying in the drying chamber is _____ degree celsius.

[Question ID = 4455][Question Description = 105_50_DAI_SEP22_Q05]

1. 40
[Option ID = 17817]
2. 50
[Option ID = 17818]
3. 60
[Option ID = 17819]
4. 70
[Option ID = 17820]

6) Use of fluidized bed drier for milk powders increases _____ [Question ID = 4456][Question Description = 106_50_DAI_SEP22_Q06]

1. Bulk density [Option ID = 17821]
2. Tapped density [Option ID = 17822]
3. Dispersibility [Option ID = 17823]
4. Scorched particle [Option ID = 17824]

7) _____ test is conducted to determine the Linear viscoelastic region of materials [Question ID = 4457]
[Question Description = 107_50_DAI_SEP22_Q07]

1. Amplitude sweep [Option ID = 17825]
2. Frequency sweep [Option ID = 17826]
3. Dynamic sweep [Option ID = 17827]
4. Static sweep [Option ID = 17828]

8) Which of the following drying aids acts as wetting agents to promote water removal from foods? [Question ID = 4458]
[Question Description = 108_50_DAI_SEP22_Q08]

1. Locust bean gum [Option ID = 17829]
2. Ethyl oleate [Option ID = 17830]
3. Xanthan gum [Option ID = 17831]
4. Methyl sulfonate [Option ID = 17832]

9) Which of the following tests is used to determine the mucosal adherence ability of probiotic organisms? [Question ID = 4459]
[Question Description = 109_50_DAI_SEP22_Q09]

1. Acid tolerance test [Option ID = 17833]
2. Bile tolerance test [Option ID = 17834]
3. Cell surface hydrophobicity [Option ID = 17835]
4. Bile salt hydrolase activity [Option ID = 17836]

10) Sorption isotherms of most food products are in _____ shape [Question ID = 4460][Question Description = 110_50_DAI_SEP22_Q10]

1. Sigmoid [Option ID = 17837]
2. Parabolic [Option ID = 17838]
3. Elliptical [Option ID = 17839]
4. Decagonal [Option ID = 17840]

11) Which of the following is correct with regard to cocoa flavor?

- A. Caffeine and theobromine impart bitterness.
- B. Polyphenolic compounds impart astringency.
- C. Cocoa flavor precursors are involved in Maillard's reaction during the roasting of the cocoa beans.
- D. Solid fat index of cocoa butter also contributes to cocoa flavor.

Choose the *correct* answer from the options given below:

[Question ID = 4461][Question Description = 111_50_DAI_SEP22_Q11]

1. A, B and D only [Option ID = 17841]

2. B and C only [Option ID = 17842]
3. A and D only [Option ID = 17843]
4. A, B and C only [Option ID = 17844]

12) Which of the following is the bitter compound present in bitter oranges?

[Question ID = 4462][Question Description = 112_50_DAI_SEP22_Q12]

1. Hesperidin (Hesperitin-7-rutinoside) [Option ID = 17845]
2. Neohesperidin (Eriodictyol-7-O-neohesperidoside) [Option ID = 17846]
3. Naringin (Naringenin-7-neohesperidoside) [Option ID = 17847]
4. Neohesperidin (Hesperetin-7-neohesperidoside) [Option ID = 17848]

13) To prevent the oxidation of beer, bottled beer should not contain more than _____ mg of oxygen per liter.

[Question ID = 4463][Question Description = 113_50_DAI_SEP22_Q13]

1. 0.5 [Option ID = 17849]
2. 1.0 [Option ID = 17850]
3. 5.0 [Option ID = 17851]
4. 0.1 [Option ID = 17852]

14) Match List I with List II

| List I | List II |
|--------------------------------------|----------------------------|
| Property | Plastic packaging material |
| A. Excellent shrink property | I. EVOH |
| B. Excellent stretch property | II. PS |
| C. Excellent blister property | III. LDPE |
| D. Excellent oxygen barrier property | IV. PVC |
| | V. OPP |

Choose the correct answer from the options given below:

[Question ID = 4464][Question Description = 114_50_DAI_SEP22_Q14]

1. A -II , B -V , C -I , D -III [Option ID = 17853]
2. A -V , B -III , C -IV , D -I [Option ID = 17854]
3. A -IV , B -I , C -V , D -II [Option ID = 17855]
4. A -III , B -IV , C -II , D -V [Option ID = 17856]

15) Which of the following treatments effectively prevents the sprouting of onions during long-term storage?

[Question ID = 4465][Question Description = 115_50_DAI_SEP22_Q15]

1. Curing [Option ID = 17857]
2. Waxing [Option ID = 17858]
3. Spraying maleic hydrazide [Option ID = 17859]
4. Dipping in the water containing calcium carbide [Option ID = 17860]

16) Given below are two statements:

Statement I: For parboiling of the rice, mostly long-grain cultivars of intermediate and high amylose contents are used.

Statement II: During the bread manufacture, reducing agents such as L-cysteine, glutathione, and sodium metabisulfite is added to strengthen the dough structure.

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

[Question ID = 4466][Question Description = 116_50_DAI_SEP22_Q16]

1. Both Statement I and Statement II are true [Option ID = 17861]
2. Both Statement I and Statement II are false [Option ID = 17862]
3. Statement I is true but Statement II is false [Option ID = 17863]
4. Statement I is false but Statement II is true [Option ID = 17864]

17) Read the following options related to chemically leavened bakery products.

- A. The dough formula of wafer and ice cream cone contains high sugar, essentially no fat, and a small amount of water.
- B. Cracking pattern on the surface of cookies is due to the crystallization of sugar at the surface that no longer holds water to give a moist and moldable surface and expansion of cookies due to leavening.
- C. The setting of cakes in the oven is partially due to the starch gelatinization and egg protein coagulation.
- D. The egg white is an important component of the angel cake formula wherein the eggs and sugar are whipped to a protein

foam, and then the flour is folded in carefully so as not to disrupt the foam.

E. Bread formulas usually contain surfactants to increase the bread's softness and shelf life.

Choose the *correct* answer from the options given below:

[Question ID = 4467][Question Description = 117_50_DAI_SEP22_Q17]

1. A, B and D only [Option ID = 17865]
2. D and E only [Option ID = 17866]
3. A, B and C only [Option ID = 17867]
4. B, C, D and E only [Option ID = 17868]

18) Which of the following egg proteins binds riboflavin?

[Question ID = 4468][Question Description = 118_50_DAI_SEP22_Q18]

1. Ovomuroid [Option ID = 17869]
2. Flavoprotein [Option ID = 17870]
3. Avidin [Option ID = 17871]
4. Conalbumin [Option ID = 17872]

19) According to the Food Safety and Standards (Fortification of Foods) Regulations (2016), the level of vitamin D fortificant in fortified edible oil is between _____ (retinol equivalent, RE) per gram of oil.

[Question ID = 4469][Question Description = 119_50_DAI_SEP22_Q19]

1. 6 µg RE and 9.9 µg RE [Option ID = 17873]
2. 270 µg RE and 450 µg RE [Option ID = 17874]
3. 0.11 µg RE and 0.16 µg RE [Option ID = 17875]
4. 75 µg RE and 125 µg RE [Option ID = 17876]

20) Given below are two statements

Statement I: The type of recrystallization of ice crystals in which there is a change in surface shape or internal structure, usually resulting in a lower surface-area-to-volume ratio is called "accretive recrystallization".

Statement II: The type of recrystallization of ice crystals in which there is an increase in the average size and a reduction in the average number of crystals, caused by the growth of larger crystals at the expense of smaller crystals is called "Isomass recrystallization"

In light of the above statements, choose the *most appropriate* answer from the options given below

[Question ID = 4470][Question Description = 120_50_DAI_SEP22_Q20]

1. Both Statement I and Statement II are correct [Option ID = 17877]
2. Both Statement I and Statement II are incorrect [Option ID = 17878]
3. Statement I is correct but Statement II is incorrect [Option ID = 17879]
4. Statement I is incorrect but Statement II is correct [Option ID = 17880]

21) Food Borne illness that can be caused by a food service worker coughing or sneezing on food is

[Question ID = 4471][Question Description = 121_50_DAI_SEP22_Q21]

1. *Clostridium botulinum*

[Option ID = 17881]

2. *S. aureus*

[Option ID = 17882]

3. *E. coli*

[Option ID = 17883]

4. *Salmonella typhimurium*

[Option ID = 17884]

22) Pick the incorrect statement regarding drum drying[Question ID = 4472][Question Description = 122_50_DAI_SEP22_Q22]

1. Contact time 3 sec or less [Option ID = 17885]
2. Removal after $\frac{3}{4}$ to $\frac{7}{8}$ revolution [Option ID = 17886]
3. Drum clearance 0.5 to 1.0 mm [Option ID = 17887]
4. Steam economy 1.6 to 2.5 units [Option ID = 17888]

23) Which of the following membrane separation technique would be most suitable for partial desalination of whey in dairy industry?[Question ID = 4473][Question Description = 123_50_DAI_SEP22_Q23]

1. Reverse osmosis [Option ID = 17889]

2. Nano filtration [Option ID = 17890]
3. Ultra filtration [Option ID = 17891]
4. Membrane filtration [Option ID = 17892]

24) In a food processing plant, a brine solution is heated from - 12 degree Celsius to - 65 degree Celsius in a double pipe parallel flow heat exchanger by water entering at 35 degree Celsius and leaving at 20.5 degree Celsius. Let the rate of flow is 9 kg/min. Estimate the area of heat exchanger for an overall heat transfer coefficient of 860 W/m² K. For water $c_p = 4.186 \times 10^3$ J/kg K [Question ID = 4474][Question Description = 124_50_DAI_SEP22_Q24]

1. 1.293 m² [Option ID = 17893]
2. 0.293 m² [Option ID = 17894]
3. 7.293 m² [Option ID = 17895]
4. 8.293 m² [Option ID = 17896]

25) A riveted joint does not fail by _____ of rivets.

- (I) Tearing
- (II) Shearing
- (III) Tearing of the plate across a row
- (IV) None of the above

Choose the *correct* answer from the options given below:

[Question ID = 4475][Question Description = 125_50_DAI_SEP22_Q25]

1. (I), (II) and (III) [Option ID = 17897]
2. (I) and (II) only [Option ID = 17898]
3. (I) and (III) only [Option ID = 17899]
4. (IV) only [Option ID = 17900]

26) What is Air Conditioning?

- (I) Air Conditioning is the process of adding heat and increasing the humidity
- (II) Air Conditioning is the process of removing heat and controlling the humidity of air in a closed space
- (III) Air Conditioning is the process of controlling air moisture in an open area by adding heat

Choose the *correct* answer from the options given below:

[Question ID = 4476][Question Description = 126_50_DAI_SEP22_Q26]

1. (I) and (III) only

[Option ID = 17901]

2. (I) only

[Option ID = 17902]

3. (III) only

[Option ID = 17903]

4. (II) only

[Option ID = 17904]

27) Solenoid Valve is a [Question ID = 4477][Question Description = 127_50_DAI_SEP22_Q27]

1. Sensor [Option ID = 17905]
2. Controller [Option ID = 17906]
3. Control Device [Option ID = 17907]
4. Comparator [Option ID = 17908]

28) Requirement of condenser can possibly be avoided by use of [Question ID = 4478][Question Description = 128_50_DAI_SEP22_Q28]

1. Multi effect evaporator [Option ID = 17909]
2. Preheaters [Option ID = 17910]
3. TVR [Option ID = 17911]
4. MVR [Option ID = 17912]

29) The separation limit for a membrane is determined by the lowest _____ that can be separated. [Question ID = 4479][Question Description = 129_50_DAI_SEP22_Q29]

1. Fractional weight [Option ID = 17913]
2. Molecular weight [Option ID = 17914]
3. Ion weight [Option ID = 17915]
4. Mass [Option ID = 17916]

30) Some examples of heat exchanger are

- (I) Condensers and evaporators in refrigeration units
 (II) Evaporator of an ice plant and milk chiller of a pasteurizing plant
 (III) Automobile radiators and oil coolers of heat engines

Identify the correct answer

Choose the *correct* answer from the options given below:

[Question ID = 4480][Question Description = 130_50_DAI_SEP22_Q30]

1. (I), (II) and (III) [Option ID = 17917]
2. (I) and (II) only [Option ID = 17918]
3. (I) and (III) only [Option ID = 17919]
4. (II) and (III) only [Option ID = 17920]

31) Match List I with List II

| Laws | Physical properties |
|---------------------|--|
| A. Raoult's Law | I. Electrode potential |
| B. Stokes law | II. Equivalent conductance |
| C. Kohlrausch's Law | III. Scattering of light by colloidal solution |
| D. Nernst equation | IV. Creaming phenomenon |
| | V. Vapour pressure of solution |

Choose the correct answer from the options given below:

[Question ID = 4481][Question Description = 131_50_DAI_SEP22_Q31]

1. A - V, B - IV, C - II, D - I [Option ID = 17921]
2. A - V, B - IV, C - III, D - I [Option ID = 17922]
3. A - II, B - IV, C - V, D - I [Option ID = 17923]
4. A - II, B - III, C - V, D - I [Option ID = 17924]

32) _____ is used to estimate the fat content in cream

[Question ID = 4482][Question Description = 132_50_DAI_SEP22_Q32]

1. Stalagnometer [Option ID = 17925]
2. Butyrometer [Option ID = 17926]
3. Butyro-refractometer [Option ID = 17927]
4. Pycnometer [Option ID = 17928]

33) Triacylglycerols of milk fat can crystallize predominantly in _____ polymorphic forms [Question ID = 4483][Question Description = 133_50_DAI_SEP22_Q33]

1. α [Option ID = 17929]
2. α' [Option ID = 17930]
3. β [Option ID = 17931]
4. β' [Option ID = 17932]

34) Read the following statements about cow's milk allergy (CMA)

- A. CMA is an inflammatory response to milk proteins.
- B. It is distinct from lactose intolerance.
- C. CMA is more prevalent in infants than in adults.
- D. The dominant immunological mechanisms driving allergic reactions change with age.
- E. Non-IgE-mediated reactions common in infancy and IgE-mediated reactions dominating in adults.

Choose the *correct* answer from the options given below:

[Question ID = 4484][Question Description = 134_50_DAI_SEP22_Q34]

1. A, B, C and D only [Option ID = 17933]
2. A, B, C and E only [Option ID = 17934]
3. B, C, D and E only [Option ID = 17935]
4. C, D and E only [Option ID = 17936]

35) Hehner test is used for detection of _____ in milk [Question ID = 4485][Question Description = 135_50_DAI_SEP22_Q35]

1. Hydrogen peroxide [Option ID = 17937]
2. Sodium chloride [Option ID = 17938]
3. Formalin [Option ID = 17939]
4. Anionic detergent [Option ID = 17940]

36) Given below are two statements

Statement I: Flame photometer is very useful to detect the alkali and alkaline earth metals from the colour of the flame.

Statement II: Flame photometer is used in analysis for the determination of Na, K, Ca & Fe in biological samples.

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

[Question ID = 4486][Question Description = 136_50_DAI_SEP22_Q36]

1. Both Statement I and Statement II are true [Option ID = 17941]
2. Both Statement I and Statement II are false [Option ID = 17942]
3. Statement I is true but Statement II is false [Option ID = 17943]
4. Statement I is false but Statement II is true [Option ID = 17944]

37) In $500 \times g$, what does this represent in accordance to centrifugation?[Question ID = 4487][Question Description = 137_50_DAI_SEP22_Q37]

1. Gravitational force [Option ID = 17945]
2. Centrifugal force is 500 times greater than earthly gravitational force [Option ID = 17946]
3. Centrifugal force is 500 times less than earthly gravitational force [Option ID = 17947]
4. It is the same as the speed of the rotor in rpm [Option ID = 17948]

38) Tandem mass spectroscopy combines which of the following devices?[Question ID = 4488][Question Description = 138_50_DAI_SEP22_Q38]

1. Mass spectrometer and gas-solid chromatography [Option ID = 17949]
2. Mass spectrometer and gas-liquid chromatography [Option ID = 17950]
3. Mass spectrometer and liquid chromatography [Option ID = 17951]
4. Mass spectrometer and Mass spectrometer [Option ID = 17952]

39) What is correct statement about accuracy in analytical measurement?

[Question ID = 4489][Question Description = 139_50_DAI_SEP22_Q39]

1. A measure of how often an experimental value can be repeated [Option ID = 17953]
2. The number of significant figures used in a measurement [Option ID = 17954]
3. The closeness of a measured value to the real value [Option ID = 17955]
4. It represents degree of reproducibility [Option ID = 17956]

40) How many acts were merged to enact Food Safety and Standards Act, 2006

[Question ID = 4490][Question Description = 140_50_DAI_SEP22_Q40]

1. 6 [Option ID = 17957]
2. 7 [Option ID = 17958]
3. 5 [Option ID = 17959]
4. 9 [Option ID = 17960]

41) Ingestion of performed toxin in food give rise to

[Question ID = 4491][Question Description = 141_50_DAI_SEP22_Q41]

1. Food infection
[Option ID = 17961]
2. Food intoxication
[Option ID = 17962]
3. Food toxico-infection
[Option ID = 17963]
4. Food Allergy
[Option ID = 17964]

42) Which of the following bacteria belongs to coliforms entering through fecal contamination?[Question ID = 4492]

[Question Description = 142_50_DAI_SEP22_Q42]

1. *Escherichia coli* [Option ID = 17965]
2. *Enterobacter aerogenes* [Option ID = 17966]
3. *Salmonella* [Option ID = 17967]
4. *Shigella* [Option ID = 17968]

43) Which of the following bacteria are known to be food intoxicants?

- A. *Staphylococcus aureus*
- B. *Listeria monocytogenes*

C. *Clostridium botulinum*

D. *Salmonella* species

Choose the *correct* answer from the options given below

[Question ID = 4493][Question Description = 143_50_DAI_SEP22_Q43]

1. A and B [Option ID = 17969]
2. A and C [Option ID = 17970]
3. C and D [Option ID = 17971]
4. B and D [Option ID = 17972]

44) Arrange following fatty acids, in descending order of relative rate of oxidations

- A. Stearic acid
- B. Oleic acid
- C. Linoleic acid
- D. Linolenic acid

Choose the *correct* answer from the options given below

[Question ID = 4494][Question Description = 144_50_DAI_SEP22_Q44]

1. B, D, C, A [Option ID = 17973]
2. D,C,B, A [Option ID = 17974]
3. D,C, A, B [Option ID = 17975]
4. C, D, B, A [Option ID = 17976]

45) What is the correct ascending order of rays with respect to their wavelength

- A. Gamma
- B. Visible
- C. Microwave
- D. X rays
- E. Radiowaves

Choose the *correct* answer from the options given below

[Question ID = 4495][Question Description = 145_50_DAI_SEP22_Q45]

1. E, C, A, B, D [Option ID = 17977]
2. E, C, B, D, A [Option ID = 17978]
3. E, C, D, A, B [Option ID = 17979]
4. E, D, C, B, A [Option ID = 17980]

46) Match List I with List II

| List I | List II |
|----------------------------------|--|
| Bacterial pathogens | Selective plating medium |
| A. <i>Bacillus cereus</i> | I. Xylose lysine deoxycholate citrate agar |
| B. <i>Listeria monocytogenes</i> | II. Baird Parker agar |
| C. <i>Staphylococcus aureus</i> | III. Mannitol egg yolk polymyxin agar |
| D. <i>Salmonella</i> | IV. PALCAM agar |
| | V. VRBA |

Choose the correct answer from the options given below:

[Question ID = 4496][Question Description = 146_50_DAI_SEP22_Q46]

1. A - I, B - II, C - III, D - IV [Option ID = 17981]
2. A -III, B - IV, C - II, D - I [Option ID = 17982]
3. A-II, B - III, C - IV, D - V [Option ID = 17983]
4. A - V, B - IV, C -III, D - I [Option ID = 17984]

47) Given below are two statements, one is labelled as Assertion A and the other is labelled as Reason R

Assertion A: Khoa and khoa-based sweets are more prone to *Staphylococcus aureus* contamination and food poisoning problems

Reason R: Human handlers are directly involved in the preparation of khoa and khoa-based sweets

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

[Question ID = 4497][Question Description = 147_50_DAI_SEP22_Q47]

- Both A and R are true and R is the correct explanation of A
[Option ID = 17985]
- Both A and R are true but R is NOT the correct explanation of A
[Option ID = 17986]
- A is true but R is false
[Option ID = 17987]
- A is false but R is true
[Option ID = 17988]

48) Given below are two statements

Statement I: Clean milk is not always safe for consumption

Statement II: Milk is a carrier of potentially pathogenic bacteria

In light of the above statements, choose the *most appropriate* answer from the options given below

[Question ID = 4498][Question Description = 148_50_DAI_SEP22_Q48]

- Both Statement I and Statement II are correct [Option ID = 17989]
- Both Statement I and Statement II are incorrect [Option ID = 17990]
- Statement I is correct but Statement II is incorrect [Option ID = 17991]
- Statement I is incorrect but Statement II is correct [Option ID = 17992]

49) The enzyme responsible for bitty cream defects in cream [Question ID = 4499][Question Description = 149_50_DAI_SEP22_Q49]

- Phospholipase [Option ID = 17993]
- Lipase [Option ID = 17994]
- Esterase [Option ID = 17995]
- Proteases [Option ID = 17996]

50) What are the IMViC test results for *E.coli*? [Question ID = 4500][Question Description = 150_50_DAI_SEP22_Q50]

- +++ [Option ID = 17997]
- [Option ID = 17998]
- + [Option ID = 17999]
- +++ [Option ID = 18000]

Topic:- 35 Food Processing Technology_PHD

1) Given below are two statements

Statement I: Emulsion stabilizers coat the oil droplet surfaces to provide an energy barrier that reduces the chance of coalescence of colliding droplets.

Statement II: HLB value of an emulsifier provides an efficient indication of potential applications in complex systems such as foods containing carbohydrates, proteins, and lipids that interact with each other than in pure binary systems.

In light of the above statements, choose the *most appropriate* answer from the options given below

[Question ID = 4551][Question Description = 101_48_FOT_SEP22_Q01]

- Both Statement I and Statement II are correct [Option ID = 18201]
- Both Statement I and Statement II are incorrect [Option ID = 18202]
- Statement I is correct but Statement II is incorrect [Option ID = 18203]
- Statement I is incorrect but Statement II is correct [Option ID = 18204]

2) Among the different types of pulses in the pulsed electric field processing, which of the following is the least efficient for microbial inactivation? [Question ID = 4552][Question Description = 102_48_FOT_SEP22_Q02]

- Square wave pulses [Option ID = 18205]
- Sinusoidal wave pulses [Option ID = 18206]
- Rectangular wave pulses [Option ID = 18207]
- Exponentially decaying wave pulses [Option ID = 18208]

3) Match List I with List II

| List I | List II |
|------------------------|-----------------|
| Ultraviolet light type | Wavelength (nm) |
| A. UV-A | I. 200-280 |

| | |
|--------------|-------------|
| B. UV-B | II. 100-200 |
| C. UV-C | III. 50-100 |
| D. UV-vacuum | IV. 315-400 |
| | V. 280-315 |

Choose the correct answer from the options given below:

[Question ID = 4553][Question Description = 103_48_FOT_SEP22_Q03]

1. A - III, B - II, C - I, D - V [Option ID = 18209]
2. A - V, B - I, C - II, D - IV [Option ID = 18210]
3. A - IV, B - V, C - I, D - II [Option ID = 18211]
4. A - II, B - IV, C - V, D - I [Option ID = 18212]

4) Among the following materials, which of the materials has the least penetration depth of electron beams at constant radiation?[Question ID = 4554][Question Description = 104_48_FOT_SEP22_Q04]

1. Air [Option ID = 18213]
2. Plastic [Option ID = 18214]
3. Aluminum [Option ID = 18215]
4. Water [Option ID = 18216]

5) Milk containing 3.7% fat and 12.8% total solids is to be evaporated to produce a product containing 7.9% fat. What is the total solids concentration in the final product, assuming that there are no losses during the process?[Question ID = 4555]

[Question Description = 105_48_FOT_SEP22_Q05]

1. 27.3% [Option ID = 18217]
2. 46.8% [Option ID = 18218]
3. 22.0% [Option ID = 18219]
4. 33.3% [Option ID = 18220]

6) Which of the following is not a reason for subjecting fruits jams to high-pressure processing?[Question ID = 4556]

[Question Description = 106_48_FOT_SEP22_Q06]

1. Improved gelation [Option ID = 18221]
2. Faster sugar penetration [Option ID = 18222]
3. Limited residual pectin methylesterase activity [Option ID = 18223]
4. Yeast inactivation [Option ID = 18224]

7) According to the Bond's law, how much power is required to crush 2 tons/hr of a material if 80% of the feed passes through IS Sieve no. 480 (4.75 mm opening) and 80% of the product passes through IS Sieve no. 50 (0.5 mm opening)?

Given the work index of the material as 6.30.[Question ID = 4557][Question Description = 107_48_FOT_SEP22_Q07]

1. 7.129 kW [Option ID = 18225]
2. 15.92 kW [Option ID = 18226]
3. 18.75 kW [Option ID = 18227]
4. 5.289 kW [Option ID = 18228]

8) Which of the following grains has the largest proportion of germ in proportion to the rest of the kernel?[Question ID = 4558][Question Description = 108_48_FOT_SEP22_Q08]

1. *Zea mays* [Option ID = 18229]
2. *Pennisetum glaucum* [Option ID = 18230]
3. *Hordeum vulgare* [Option ID = 18231]
4. *Triticum durum* [Option ID = 18232]

9) With the increase in the DE value of corn syrup from 20 to 75, the following functional properties will get affected as given below.

- A. Flavour enhancement increases
- B. Prevention of sugar crystallization increases
- C. Freezing point depression increases
- D. Foam stabilization increases
- E. Bodying characteristics increases

Choose the *correct* answer from the options given below:

[Question ID = 4559][Question Description = 109_48_FOT_SEP22_Q09]

1. A, B and D only [Option ID = 18233]
2. A and C only [Option ID = 18234]
3. C and D only [Option ID = 18235]

4. B and C only [Option ID = 18236]

10) In the Solvent Retention Capacity (SRC) test of wheat flour, which of the following solutions are associated with the quality of wheat flour in terms of damaged starch content?[Question ID = 4560][Question Description = 110_48_FOT_SEP22_Q10]

1. Water [Option ID = 18237]
2. Sucrose [Option ID = 18238]
3. Sodium carbonate [Option ID = 18239]
4. Lactic acid [Option ID = 18240]

11) Which of the following is an established method for evaluation of commercial maturity of "Onion"?[Question ID = 4561][Question Description = 111_48_FOT_SEP22_Q11]

1. Astringency [Option ID = 18241]
2. Size [Option ID = 18242]
3. Shape [Option ID = 18243]
4. Leaf wilting [Option ID = 18244]

12) Which of the following is non-climacteric produce?[Question ID = 4562][Question Description = 112_48_FOT_SEP22_Q12]

1. Passion fruit [Option ID = 18245]
2. Peach [Option ID = 18246]
3. Pepper [Option ID = 18247]
4. Persimmon [Option ID = 18248]

13) Which of the following group of enzymes present in fruits and vegetables is known as copper-containing enzymes?[Question ID = 4563][Question Description = 113_48_FOT_SEP22_Q13]

1. Polymethylesterases [Option ID = 18249]
2. Lipoxygensases [Option ID = 18250]
3. Peroxidases [Option ID = 18251]
4. Polyphenoloxidases [Option ID = 18252]

14) Match List I with List II

| List I | List II |
|---------------------------|--------------------|
| (Vitamins) | (Common names) |
| A. Vitamin M | I. Ergocalciferol |
| B. Vitamin H | II. Folic acid |
| C. Vitamin PP | III. Phylloquinone |
| D. Vitamin K ₁ | IV. Niacin |
| | V. Biotin |

Choose the correct answer from the options given below:

[Question ID = 4564][Question Description = 114_48_FOT_SEP22_Q14]

1. A - II, B - V, C - IV, D -III [Option ID = 18253]
2. A - IV, B - III, C - II, D -I [Option ID = 18254]
3. A - V, B - II, C - I, D -IV [Option ID = 18255]
4. A - III, B - I, C - V, D - II [Option ID = 18256]

15) Which of the following is considered the "most common chemical marker" for early-stage Maillard reaction?[Question ID = 4565][Question Description = 115_48_FOT_SEP22_Q15]

1. Carboxymethyl-lysine [Option ID = 18257]
2. Pyrraline [Option ID = 18258]
3. Pyridosine [Option ID = 18259]
4. Furosine [Option ID = 18260]

16) Which of the following fruits are used to produce "Boukha" wine?[Question ID = 4566][Question Description = 116_48_FOT_SEP22_Q16]

1. Figs [Option ID = 18261]
2. Apple [Option ID = 18262]
3. Cashew apple [Option ID = 18263]
4. Peach [Option ID = 18264]

17) Which of the following desirable microorganisms is present in *Koji* used for preparing Japanese soy sauce, Shoyu?[Question ID = 4567][Question Description = 117_48_FOT_SEP22_Q17]

1. *Bacillus natto* [Option ID = 18265]

2. *Aspergillus oryzae* [Option ID = 18266]
3. *Zygosaccharomyces rouxii* [Option ID = 18267]
4. *Mucor hiemalis* [Option ID = 18268]

18) In an iron powder-based oxygen scavenger, one gram of iron can react with _____ oxygen at standard temperature and pressure.[Question ID = 4568][Question Description = 118_48_FOT_SEP22_Q18]

1. 0.0136 mol [Option ID = 18269]
2. 0.3030 mol [Option ID = 18270]
3. 1.0306 mol [Option ID = 18271]
4. 0.0007 mol [Option ID = 18272]

19) Which of the following is the most suitable packaging material for spreadable processed cheese?[Question ID = 4569]
[Question Description = 119_48_FOT_SEP22_Q19]

1. Squeezable tubes of LDPE [Option ID = 18273]
2. Multilayered cups comprising PS-LDPE [Option ID = 18274]
3. Multilayered cups comprising PET-LDPE [Option ID = 18275]
4. Coextruded LDPE-HDPE squeezable tube with an EVOH middle layer [Option ID = 18276]

20) Read the following sentences related to glass packaging materials.

A. Breaking point of silicate glass is 70 MPa.

B. The purpose of including cullet in glass bottle manufacture is for decolorizing.

C. Annealing is the temperature at which stresses in the glass are relieved in a few minutes.

D. The three main colors of glass used to produce containers are flint or clear, amber or brown, and green.

E. Thermal stresses can be reduced by minimizing the temperature gradient from the hot to the cold side, decreasing the glass thickness, and avoiding sharp corners.

Choose the *correct* answer from the options given below:

[Question ID = 4570][Question Description = 120_48_FOT_SEP22_Q20]

1. A, B and C only [Option ID = 18277]
2. C and D only [Option ID = 18278]
3. A, C, D and E only [Option ID = 18279]
4. B and E only [Option ID = 18280]

21) Which of the following plastic films is most suitable for shrink packaging applications in the food industry?[Question ID = 4571][Question Description = 121_48_FOT_SEP22_Q21]

1. Plasticized PVC [Option ID = 18281]
2. BOPP [Option ID = 18282]
3. Foamed PS [Option ID = 18283]
4. Metallized LDPE [Option ID = 18284]

22) Which of the following post-paper manufacturing operations results in rendering the paper sheet more resistant to penetration of liquids, particularly water?[Question ID = 4572][Question Description = 122_48_FOT_SEP22_Q22]

1. Calendering [Option ID = 18285]
2. Supercalendering [Option ID = 18286]
3. Sizing [Option ID = 18287]
4. Pigmenting [Option ID = 18288]

23) Which of the following is a 3D packaging food service article that is manufactured from an aqueous slurry of cellulosic fibers and formed into discrete products on screened molds?[Question ID = 4573][Question Description = 123_48_FOT_SEP22_Q23]

1. Molded pulp containers [Option ID = 18289]
2. Corrugated fiberboard box [Option ID = 18290]
3. Folding box carton [Option ID = 18291]
4. Solid fiber drum [Option ID = 18292]

24) According to the Bureau of Indian Standards (IS: 1397, 1990), Kraft paper of Grade 2 quality is made from _____[Question ID = 4574][Question Description = 124_48_FOT_SEP22_Q24]

1. 100% Waste or recycled paper [Option ID = 18293]
2. 100% Unbleached sulfate pulp [Option ID = 18294]
3. A mixture of agricultural crop residues and sulfate pulp [Option ID = 18295]
4. A mixture of agricultural crop residue and waste paper [Option ID = 18296]

25) Which of the following microorganisms produce extracellular cellulose in a highly pure form that is usually NOT combined with lignin that may be explored for packaging applications?[Question ID = 4575][Question Description = 125_48_FOT_SEP22_Q25]

1. *Wautersia eutropha* [Option ID = 18297]
2. *Komagateibacter xylinus* [Option ID = 18298]
3. *Aspergillus niger* [Option ID = 18299]
4. *Bacillus flexus* [Option ID = 18300]

26) Read the following sentences related to metal packaging materials.

A. Copper, as an alloying element, increases the corrosion resistance of aluminum.

B. A contour on the can lid acts like a diaphragm expanding during thermal processing and returning to a concave profile when a vacuum develops inside the can on cooling.

C. Vinyl-organosol is the universal golden coating or enamel used for a three-piece can.

D. Tinplate is a high-carbon mild steel sheet varying in thickness from around 0.15-0.5 mm with a coating of tin between 2.8 and 17 gsm (gm⁻²).

E. Collapsible aluminum tubes may be used for packaging cheese spreads and sauces.

Choose the *correct* answer from the options given below:

[Question ID = 4576][Question Description = 126_48_FOT_SEP22_Q26]

1. A, C and D only [Option ID = 18301]
2. A and C only [Option ID = 18302]
3. D and E only [Option ID = 18303]
4. B and E only [Option ID = 18304]

27) Which of the following is NOT a vacuum closure used in food packaging?[Question ID = 4577][Question Description = 127_48_FOT_SEP22_Q27]

1. Lug-type or twist cap [Option ID = 18305]
2. Press-on twist-off cap [Option ID = 18306]
3. Crown cap [Option ID = 18307]
4. Pry-off cap [Option ID = 18308]

28) Which of the following sensory evaluation techniques is a method used for taint testing wherein the test sample samples are compared against a previously presented standard and rated in one of four categories namely "standard", "perhaps standard", "perhaps not standard", and "not standard".[Question ID = 4578][Question Description = 128_48_FOT_SEP22_Q28]

1. Triangle Test [Option ID = 18309]
2. Duo-Trio Test [Option ID = 18310]
3. R-Index Test [Option ID = 18311]
4. Paired Comparison Test [Option ID = 18312]

29) Which of the following is considered a primary component of chewing gums?

[Question ID = 4579][Question Description = 129_48_FOT_SEP22_Q29]

1. Locust bean gum
[Option ID = 18313]
2. Gum arabica
[Option ID = 18314]
3. Modified starch
[Option ID = 18315]
4. Butyl rubber
[Option ID = 18316]

30) Which of the following triglyceride composition is predominant in cocoa butter?[Question ID = 4580][Question Description = 130_48_FOT_SEP22_Q30]

1. S-S-S [Option ID = 18317]
2. S-O-O [Option ID = 18318]
3. S-O-S [Option ID = 18319]
4. S-Li-S [Option ID = 18320]

31) Which of the following is the commercial source of phytosterols for the fortification of food products?[Question ID = 4581][Question Description = 131_48_FOT_SEP22_Q31]

1. Tall oil [Option ID = 18321]
2. Dried fruits and vegetables [Option ID = 18322]
3. Steam distillate of vegetable oil processing [Option ID = 18323]
4. Dried cereals and legumes [Option ID = 18324]

32) Which of the following is a plot of uniaxial strain or deformation as a function of time when the stress is suddenly applied and held constant?[Question ID = 4582][Question Description = 132_48_FOT_SEP22_Q32]

1. Stress relaxation [Option ID = 18325]
2. Creep [Option ID = 18326]
3. Resonance [Option ID = 18327]
4. Flow behaviour [Option ID = 18328]

33) Which of the following terms refer to "illness occurring as a consequence of ingesting a preformed bacterial or mold toxin because of its growth in a food"?[Question ID = 4583][Question Description = 133_48_FOT_SEP22_Q33]

1. Toxicoinfection [Option ID = 18329]
2. Infection [Option ID = 18330]
3. Intoxication [Option ID = 18331]
4. Disease [Option ID = 18332]

34) Which of the following is a causative microorganism of "blue mold rot" among apples and pears?[Question ID = 4584][Question Description = 134_48_FOT_SEP22_Q34]

1. *Botrytis cinerea* [Option ID = 18333]
2. *Colletotrichum coccodes* [Option ID = 18334]
3. *Penicillium expansum* [Option ID = 18335]
4. *Geotrichum candidum* [Option ID = 18336]

35) What is the minimum water activity (a_w) required for the growth of halophilic bacteria?[Question ID = 4585][Question Description = 135_48_FOT_SEP22_Q35]

1. 0.75 [Option ID = 18337]
2. 0.61 [Option ID = 18338]
3. 0.80 [Option ID = 18339]
4. 0.93 [Option ID = 18340]

36) As per the HACCP principles, which of the following stages of butter production in a dairy plant are considered critical control points (CCPs)?[Question ID = 4586][Question Description = 136_48_FOT_SEP22_Q36]

1. Receiving raw cream, aging of cream, and churning stage [Option ID = 18341]
2. Cream pasteurization, churning, and metal detector [Option ID = 18342]
3. Incoming cream, pasteurization of cream, and metal detector [Option ID = 18343]
4. Aging of cream, churning, and storage [Option ID = 18344]

37) Genetically modified papaya contains _____ genes.[Question ID = 4587][Question Description = 137_48_FOT_SEP22_Q37]

1. Ringspot virus resistant [Option ID = 18345]
2. Insect resistant [Option ID = 18346]
3. Polygalacturonase preventing [Option ID = 18347]
4. Peroxidase preventing [Option ID = 18348]

38) According to the FSSR (2011), the minimum total soluble solids content of tomato puree shall be _____ percent.[Question ID = 4588][Question Description = 138_48_FOT_SEP22_Q38]

1. 5 [Option ID = 18349]
2. 9 [Option ID = 18350]
3. 25 [Option ID = 18351]
4. 45 [Option ID = 18352]

39) According to the Food Safety and Standards (Packaging) Regulations (2018), the maximum permitted migration limits of "iron" from plastic packaging materials into food products is _____ mg/kg.[Question ID = 4589][Question Description = 139_48_FOT_SEP22_Q39]

1. 1.0 [Option ID = 18353]
2. 48.0 [Option ID = 18354]
3. 5.0 [Option ID = 18355]
4. 25.0 [Option ID = 18356]

40) Which of the following essential amino acids is limiting in collagen?[Question ID = 4590][Question Description = 140_48_FOT_SEP22_Q40]

1. Valine [Option ID = 18357]

2. Leucine [Option ID = 18358]
3. Lysine [Option ID = 18359]
4. Phenylalanine [Option ID = 18360]

41) During the postmortem conversion of muscle to meat, the sharp decline of pH even before the dissipation of body heat through carcass chilling results in a condition called _____ meat[Question ID = 4591][Question Description = 141_48_FOT_SEP22_Q41]

1. Dark, Firm, and Dry [Option ID = 18361]
2. Dark, Soft, and Exudative [Option ID = 18362]
3. Pale, Soft and Exudative [Option ID = 18363]
4. Pale, Firm, and Dry [Option ID = 18364]

42) What is the approximate concentration of phospholipids in egg yolk lipids?[Question ID = 4592][Question Description = 142_48_FOT_SEP22_Q42]

1. 28% [Option ID = 18365]
2. 65% [Option ID = 18366]
3. 5% [Option ID = 18367]
4. 50% [Option ID = 18368]

43) Match List I with List II

| List I | List II |
|--------------------------|---------------------------|
| (Type of Meat) | (Typical color) |
| A. Buffalo meat and beef | I. Grey white to dull red |
| B. Pork | II. Light to dark red |
| C. Poultry | III. Stable pink |
| D. Mutton and chevon | IV. Greyish pink |
| | V. Cherry red |

Choose the correct answer from the options given below:

[Question ID = 4593][Question Description = 143_48_FOT_SEP22_Q43]

1. A - IV, B - III, C - II, D - V [Option ID = 18369]
2. A - II, B - V, C - I, D - III [Option ID = 18370]
3. A - III, B - I, C - V, D - IV [Option ID = 18371]
4. A - V, B - IV, C - I, D - II [Option ID = 18372]

44) Which of the following are the critical temperature and pressure of carbon dioxide used in supercritical fluid extraction systems?[Question ID = 4594][Question Description = 144_48_FOT_SEP22_Q44]

1. 243 °C and 6.38 MPa [Option ID = 18373]
2. 364 °C and 22.1 MPa [Option ID = 18374]
3. 31.1 °C and 7.39 MPa [Option ID = 18375]
4. 10 °C and 30 MPa [Option ID = 18376]

45) For obtaining the best organoleptic quality as well as the most desirable frying quality in terms of shape retention, softness, and integrity, at what temperature shall the coagulation of *paneer* should be carried out?[Question ID = 4595][Question Description = 145_48_FOT_SEP22_Q45]

1. 90 °C [Option ID = 18377]
2. 76 °C [Option ID = 18378]
3. 72 °C [Option ID = 18379]
4. 86 °C [Option ID = 18380]

46) Which of the following enrichment to a food matrix does not improve the stability of probiotics during storage?[Question ID = 4596][Question Description = 146_48_FOT_SEP22_Q46]

1. Addition of emulsifiers [Option ID = 18381]
2. Lowering salt content of cheese [Option ID = 18382]
3. Adding proteins or substituting casein by whey proteins in fermented milks [Option ID = 18383]
4. Adding honey [Option ID = 18384]

47) Among the various stages of new food product development, usually at which stage the multivariate data analysis is not carried out?[Question ID = 4597][Question Description = 147_48_FOT_SEP22_Q47]

1. Process optimization and Up-scaling [Option ID = 18385]
2. Shelf life testing [Option ID = 18386]
3. Validation of proof of concept [Option ID = 18387]
4. Commercialization [Option ID = 18388]

48) Which of the following is considered the predominant pungent volatile constituent of "Onion"?

[Question ID = 4598][Question Description = 148_48_FOT_SEP22_Q48]

1. Diallyl sulfide [Option ID = 18389]
2. Allyl isothiocyanate [Option ID = 18390]
3. Zingerol [Option ID = 18391]
4. Diallyl disulfide [Option ID = 18392]

49) Which of the following alcoholic beverages is flavored and originated in Poland and Russia?[Question ID = 4599]

[Question Description = 149_48_FOT_SEP22_Q49]

1. Vodka [Option ID = 18393]
2. Whiskey [Option ID = 18394]
3. Rum [Option ID = 18395]
4. Beer [Option ID = 18396]

50) "Gumminess", one of the texture profile analysis (TPA) parameters, is a product of which of the following parameters?

[Question ID = 4600][Question Description = 150_48_FOT_SEP22_Q50]

1. Adhesiveness and Springiness [Option ID = 18397]
2. Hardness and Springiness [Option ID = 18398]
3. Cohesiveness and Springiness [Option ID = 18399]
4. Hardness and Cohesiveness [Option ID = 18400]