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NUMBER OF QUESTIONS ASKED IN UGC NET - HOME SCIENCE (DEC.2015 to JAN. 2026)

UNIT-1		2015	2016	2017		2018	2019		2020	2021	2022		2023			2024	2025		2026
FOOD SCIENCE AND FOOD SERVICE MANAGEMENT		DEC	JUL	JAN	NOV	JUL	JUN	DEC	JUN	JUN	JUN	OCT	MAR	JUN	DEC	AUG	JAN	JUN	JAN
1.1	Food Science and Nutrition	-	1	-	-	1	-	-	-	1	-	-	1	-	-	1	-	-	1
1.2	Properties of Food – Physical and Chemical Properties	-	2	6	2	-	1	1	1	1	1	-	-	2	1	1	1	-	-
1.3	Quality Evaluation of Foods- Objectives and Subjective	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-
1.4	Effects of Cooking and Processing Techniques on Nutritional Components and Other Physical Parameters, Food Preservation and Application.	3	2	3	4	4	1	3	2	1	1	-	-	-	1	1	-	4	3
1.5	Food pigments and additives	-	1	1	2	1	1	-	2	2	-	-	-	-	1	1	-	-	1
1.6	Food Standards, Microbiological Safety of Food, HACCP, Food Packaging.	3	3	2	-	2	3	2	1	-	1	-	3	1	4	1	2	2	1
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1.8	New Product Development - Nano Technology	-	-	-	-	-	1	-	-	1	-	-	-	1	-	-	-	-	-
1.9	Food service management of institutional level-hospital, educational institutions, social and special institutions	2	6	4	3	1	1	-	1	-	-	-	-	-	-	2	-	-	-
1.10	New Product Development - Nano Technology	-	-	1	-	-	1	-	1	1	-	-	8	7	1	3	1	1	-

CHAPTER-1 FOOD SCIENCE AND FOOD SERVICE MANAGEMENT

Unit 1.1: Food Science and Nutrition

Previous Year Exam Questions

(JULY 2016)

1. Arrange in correct sequence the steps in the production of cheese:

I. Add renin solution for curd formation.
II. Drain the whey from curd.
III. Addition of salt to cheese.
IV. Cutting and pilling of soft cheese.
V. Addition of bacteria or mould for ripening process.
VI. Addition of lactic acid starter to pasteurized milk and keep for 30 minutes.

Codes:

(1) VI, I, IV, II, III, V (2) I, VI, II, IV, V, III
(3) I, III, II, VI, IV, V (4) VI, I, II, IV, III, V

(JULY 2018)

2. Match the tests given in List - I with the chemical compounds in List - II.

List – I	List - II
(a) Fehling's test	(i) Nitrogen
(b) Seliwanoff's test	(ii) Free fatty acids
(c) Kjeldahl's test	(iii) Ketose sugar
(d) Xanthoproteic test	(iv) Aromatic amino acids
(e) Nitroprusside test	(v) Reducing sugar
	(vi) Distinguish between mono & di saccharides
	(vii) Sulphur containing amino acids

Code:

	(a)	(b)	(c)	(d)	(e)
(1)	(v)	(iii)	(i)	(iv)	(vii)
(2)	(vi)	(v)	(i)	(ii)	(vii)
(3)	(v)	(vi)	(i)	(vii)	(iv)
(4)	(v)	(ii)	(i)	(vi)	(vii)

(2021)

3. Any two immiscible liquids when mixed together form an:

(1) Aerosol (2) Emulsion
(3) Gel (4) Sol

(MARCH 2023)

4. Government of India declared year 2018 as the National Year of Millets to promote millets for nutrition security and notified millets as :

(1) Course cereals (2) Cereals
(3) Novel cereals (4) Nutri cereals

(AUG 2024)

5. When we eat meal some compounds do not get metabolized, they instead become special molecules called :

(1) Ligands (2) Metabolomes
(3) Proteomics (4) Genomes

(JAN 2026)

6. Match the LIST—I with LIST—II

LIST—I	LIST—II
A. Emulsificaiton	I. Protein
B. Foam formation	II. Fat
C. Retrogradation	III. Sugar
D. Crystallisation	IV. Starch

Choose the correct answer from the options given below

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

Answer Key					
1	2	3	4	5	6
4	1	2	4	1,2	3

EXPLANATIONS

1. Correct Answer (4):- VI, I, II, IV, III, V

- Addition of lactic acid starter to pasteurized milk and keep it for 30 minutes.
- Add renin solution for curd formation.
- Drain the whey from the curd.
- Cutting and pilling of soft cheese.
- Addition of salt to the cheese.
- Addition of bacteria or mould for the ripening process.

2. Correct Answer (1):- (v), (iii), (i), (iv), (vii)

- **Fehling's test:** This test is used to detect reducing sugars, such as glucose and fructose. Therefore, the correct match is **Reducing sugar.**
- **Seliwanoff's test:** This test is used to distinguish between ketose sugars (like fructose) and aldose sugars. Hence, the correct match is **Ketose sugar.**
- **Kjeldahl's test:** This test is used to measure nitrogen content in compounds, commonly used to determine protein content. Therefore, the correct match is **Nitrogen.**
- **Xanthoproteic test:** This test is used to detect aromatic amino acids (such as tyrosine and

tryptophan) by reacting with concentrated nitric acid. So, the correct match is **Aromatic amino acids.**

- **Nitroprusside test:** This test is used to detect sulphur-containing amino acids (like cysteine and methionine) by reacting with sodium nitroprusside. Hence, the correct match is **Sulphur containing amino acids.**

3. Correct Answer (2):- An **emulsion** forms when two immiscible liquids, like oil and water, are mixed with an emulsifying agent, creating a stable mixture. This is commonly seen in products like mayonnaise and lotions.

4. Correct Answer (4):- In 2018, the Government of India declared the year as the National Year of Millets and categorized them as **Nutri cereals** due to their high nutritional value, including protein, fiber, and essential vitamins.

5. Correct Answer (1 & 2):- Ligands are molecules that bind to receptors without being metabolized. **Metabolomes** are sets of metabolites in the body, where some food compounds remain unchanged. Both terms describe compounds that aren't fully metabolized.

6. Correct Answer (3):- A-II, B-I, C-IV, D-III

- **Emulsification (Fat):** The process of mixing two unmixable liquids (like oil and water) often using an emulsifier, which is a key property of fats.
- **Foam formation (Protein):** Proteins (like egg whites) have the ability to trap air and form stable foams.
- **Retrogradation (Starch):** The process where cooked, gelatinized starch molecules realign themselves as the food cools (e.g., bread going stale).
- **Crystallisation (Sugar):** The process of forming solid crystals from a saturated solution, common in candy making with sugar.

Unit 1.2: Properties of Food – Physical and Chemical Properties

Previous Year Exam Questions

(JULY 2016)

1. The degree of unsaturation in fats is estimated by which method?

(1) Acid value
(2) Saponification
(3) Benedict's method
(4) Iodine value

(JULY 2016)

2. Match the nutrient in List-I with the method of estimation in List-II.

List-I	List-II
I. Monosaccharides	(i) Microkjeldahl method
II. Ketose sugars	(ii) Iodine value
III. Amino acids	(iii) Fehlings test
IV. Proteins	(iv) Dichlorophenol indophenol titration
V. Ascorbic acid	(v) Seliwanoff's test
	(vi) Ninhydrin test

Codes:

	I	II	III	IV	V
(1)	(iii)	(v)	(vi)	(i)	(iv)
(2)	(iii)	(vi)	(ii)	(i)	(v)
(3)	(iii)	(ii)	(i)	(vi)	(iv)
(4)	(iii)	(v)	(iv)	(i)	(vi)

(JAN 2017)

3. Match the laboratory tests given in List-I with their chemical compound given in List-II:

List-I	List-II
I. Ninhydrin test	(i) Cholesterol
II. Benedict's test	(ii) Free Fatty acids
III. Kjeldahl's test	(iii) Reducing sugars
IV. Iodine value	(iv) Ascorbic acid
V. 2, 6 dichlorophenol indophenol test	(v) Amino acid
	(vi) Nitrogen
	(vii) Unsaturation of fats

Codes:

	I	II	III	IV	V
(1)	(vi)	(iii)	(i)	(ii)	(vii)
(2)	(ii)	(iii)	(vii)	(vii)	(i)
(3)	(v)	(iii)	(vi)	(vii)	(iv)
(4)	(vi)	(iii)	(i)	(ii)	(iv)

(JAN 2017)

4. Following are the properties of egg:

I. Binding
II. Browning
III. Emulsifying
IV. Fermenting
V. Thickening
VI. Leavening

Codes:

(1) II, III, IV, VI
(2) I, II, V, VI
(3) I, III, V, VI
(4) III, IV, V, VI

(JAN 2017)

5. Following toxins are present in pulses:

I. Luteins
II. Trypsin inhibitor
III. Hemicellulose
IV. Lathyrogens
V. Goitrogens

Codes:

(1) II, IV, V
(2) I, II, III
(3) II, III, IV
(4) III, V, I

(JAN 2017)

6. Assertion (A): Mayonnaise is considered as a permanent emulsion.
Reason (R): Sugar, salt, acids are used as stabilizers in mayonnaise.
Codes:
(1) Both (A) and (R) are correct.
(2) Both (A) and (R) are incorrect.
(3) (A) is correct, but (R) is incorrect.
(4) (A) is incorrect, but (R) is correct.

(JAN 2017)

7. Match the organisms that cause food spoilage given in List-I with their mode of transmission via food in List-II.

List-I	List-II
I. Taenia solium	(i) Milk and milk products
II. Clostridium botulinum	(ii) Eggs and meat products
III. Staphylococcus	(iii) Pork and its aureus products
IV. Streptococcus	(iv) Cream filled foods
V. Salmonella	(v) Frozen vegetables
	(vi) Pickles
	(vii) Canned protein foods

Codes:

	I	II	III	IV	V
(1)	(iii)	(vii)	(v)	(ii)	(vi)
(2)	(iii)	(vii)	(iv)	(i)	(ii)
(3)	(ii)	(vi)	(iv)	(i)	(v)
(4)	(v)	(iii)	(i)	(ii)	(iv)

(JAN 2017)

8. Match the terms given in List-I with Foods in

List-I	List-II
I. DOPA	(i) Egg
II. Acerolin	(ii) Nuts
III. Gluten	(iii) Apple
IV. Aflatoxin	(iv) Milk
V. Ferrous sulphide	(v) Cereal
	(vi) Oil

Codes:

	I	II	III	IV	V
(1)	(iii)	(vi)	(v)	(ii)	(i)
(2)	(i)	(ii)	(iv)	(v)	(vi)
(3)	(ii)	(iii)	(v)	(vi)	(i)
(4)	(iii)	(v)	(vi)	(iv)	(ii)

(NOV 2017)

9. Following is an example of 'water-in-oil' type of emulsion:
(1) Butter (2) Milk
(3) Mayonnaise (4) Egg yolk

(NOV 2017)

10. Following foods have gluten present in the
(a) Bread
(b) Peanut Butter
(c) White Sauce
(d) Beer
(e) Besan
Codes:
(1) (a),(d),(e) (2) (a),(c),(d)
(3) (b),(c),(d) (4) (a),(b),(d)

(JUNE 2019)

11. The loss of moisture from the gel results in a condition, called
(1) dextrinization (2) retrogradation
(3) marbling (4) Syneresis

(DEC-2019)

12. Given below are two statements, one is labelled as Assertion (A) and the other is labelled as Reason (R):
Assertion (A): To get good puffed up and soft chappaties one must reknead the dough after leaving the dough for about half an hour.
Reason (R): Rekneading the dough helps in gluten development which has stretch properties and helps in puffing up.
In the light of the above two statements choose the correct option:
(1) Both (A) and (R) are correct
(2) Both (A) and (R) are incorrect
(3) (A) is correct, but (R) is incorrect
(4) (A) is incorrect, but (R) is correct

(2020)

13. The emulsifying property of mayonnaise is attributed to:
(1) Bromolein (2) Lecithin
(3) Pepsin (4) Ovaglobulin

(2021)

14. Proteins present in milk are:
A. Lactalbumins
B. Lactoglobulins
C. Casein
D. Ovalbumin
E. Myosin
Choose the correct answer from the options given below:
(1) A, B and C only (2) A, C and E only
(3) B, C and D only (4) C, D and E only

(JUNE 2022)

15. Permanent hardness in water is due to the presence of following salts:
A. Calcium bicarbonate
B. Magnesium bicarbonate
C. Magnesium chloride
D. Calcium nitrate
E. Calcium sulphate
Choose the correct answer from the options given below:
(1) A, B and C only (2) B, C and D only
(3) C, D and E only (4) A, D and E only

(JUNE 2023)

16. With respect of two major classifications of proteins, the statements that are true are

(A) Fibrous proteins are generally long
(B) Fibrous proteins are highly soluble in water
(C) Collagen is an example of fibrous protein
(D) Globular proteins are generally compact and spherical
(E) Elastin, keratin and fibrin are globular proteins

Choose the correct answer from the options given below:

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

(JUNE 2023)

17. Celluloses and hemicelluloses, in the text of food science and human nutrition are -

A. supporting structures in plant tissues
B. relatively resistant to breakdown
C. soluble in cold water
D. not digested by humans
E. yield considerable energy

Choose the correct answer from the options given below:

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

(DEC 2023)

18. Which of the following changes occur due to denaturation of protein?

(A) Peptide bonds of the protein are readily available for hydrolysis
(B) Solubility of protein increases
(C) The viscosity decreases
(D) Solubility of protein decreases
(E) Biological properties such as catalytic, hormonal are lost

Choose the correct answer from the options given below:

(1) (A), (B) and (C) Only (2) (A), (C) and (D) Only
(3) (A), (D) and (E) Only (4) (B), (C) and (E) Only

(AUG 2024)

19. Which one is the property of Hemicellulose?

(1) indigestible and insoluble in water
(2) indigestible but soluble in water
(3) on hydrolysis yields galacturonic acid and small amounts of galactose and arabinose
(4) Highly fermented by colonic bacteria

(JAN 2025)

20. Match the LIST-I with LIST-II.

LIST-I	LIST-II
A. Process of protein precipitation at isoelectric PH	I. Saponification number
B. mg (number) of Kon required to hydrolyze 1 g of fat	II. Rancidity
C. Mixing of non polar liquids with water forms	III. Flocculation
D. Deterioration of fats and oils is termed as	IV. Emulsion

Choose the correct answer from the options given below:

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

Answer Key									
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
(4)	(1)	(3)	(3)	(1)	(3)	(2)	(1)	(1)	(2)
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
(4)	(1)	(2)	(1)	(3)	(1)	(3)	(1)	(1)	(2)

EXPLANATIONS

1. Correct Answer (4):- The iodine value measures the amount of iodine (in grams) that can be absorbed by 100 grams of fat or oil. It indicates the degree of unsaturation, as unsaturated fats (containing double bonds) absorb more iodine than saturated fats. The higher the iodine value, the more unsaturated the fat is.

2. Correct Answer (1):- (iii), (v), (vi), (i), (iv)

Nutrients with their respective methods of estimation:

- **The Fehling's test** is used to detect reducing sugars, which includes **monosaccharides (like glucose).**
- **The Seliwanoff's test** is used to differentiate between aldose and ketose sugars, specifically to detect ketoses like fructose.
- **The Ninhydrin test** is commonly used to detect amino acids. It produces a blue or purple color when amino acids are present.
- **The Microkjeldahl method** is used to estimate the protein content by measuring nitrogen content.
- **The Dichlorophenol indophenol titration method** is used to estimate the concentration of ascorbic acid (Vitamin C) in a sample.

3. Correct Answer (3):- (I) - (v), (II) - (iii), (III) - (vi), (IV) - (vii), (V) - (iv)

- Ninhydrin test → **Amino acid: Detects amino acids.**
- Benedict's test → **Reducing sugars:** Detects reducing sugars.
- Kjeldahl's test → **Nitrogen:** Measures nitrogen content in proteins.
- Iodine value → **Unsaturation of fats:** Measures unsaturation in fats.
- 2, 6 dichlorophenol indophenol test → **Ascorbic acid:** Measures ascorbic acid.