

Seat No.	
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PD-35

Total No. of Pages : 10

Ph.D. Entrance Examination, 2025
FOOD SCIENCE AND TECHNOLOGY
Sub. Code : 58807

Day and Date : Tuesday, 09-09-2025

Total Marks : 100

Time : 10.00 a.m. to 12.00 noon.

Instructions:

1. All questions are compulsory.
2. Each question carries 2 marks.
3. Answers should be marked in the given OMR answer sheet by darkening the appropriate option.
4. Use black ball point pen only for marking the circle. Do not make any stray mark on the OMR Answer Sheet.
5. Follow the instructions given on OMR Sheet.
6. Rough work shall be done on the sheet provided at the end of question paper.
7. Only non programmable calculators are allowed.

Q.1. Which of the following is NOT a characteristic of research objectives?

- | | |
|---------------|----------------------|
| a) Specific | b) Measurable |
| c) Achievable | d) None of the above |

Q.2. Which of the following is an example of descriptive research?

- | | |
|------------------------|---------------------|
| a) Case study | b) Field experiment |
| c) Historical analysis | d) Meta-analysis |

Q.3. Longitudinal studies are a type of:

- | | |
|-------------------------|--------------------------|
| a) Historical research | b) Experimental research |
| c) Descriptive research | d) Qualitative research. |

Q.4. Which of the following is a secondary data source?

- | | |
|------------------|-----------------------|
| a) Questionnaire | b) Census report |
| c) Interview | d) Direct observation |

Q.5. Data collected by a researcher through experiments belong to:

- a) Secondary data
- b) Primary data
- c) Historical data
- d) Published data

Q.6. A research hypothesis is defined as:

- a) A proven fact
- b) A guess without evidence
- c) A testable statement about the relationship between variables
- d) A conclusion

Q.7. The first step in research design is:

- a) Collecting data
- b) Identifying the research problem
- c) Analyzing results
- d) Writing conclusions

Q.8. A questionnaire differs from an interview because it:

- a) Involves face-to-face interaction
- b) Is conducted orally
- c) Is a written set of questions
- d) Requires projective techniques

Q.9. A variable that is manipulated by the researcher is called:

- a) Dependent variable
- b) Independent variable
- c) Control variable
- d) Moderator variable

Q.10. Height, weight, and age are examples of:

- a) Qualitative variables
- b) Quantitative variables
- c) Intervening variables
- d) Latent variables

Q.11. The entire group from which a sample is drawn is called:

- a) Sample frame
- b) Universe
- c) Parameter
- d) Population

Q.12. Stratified random sampling is most useful when:

- a) Population is homogeneous
- b) Population has distinct subgroups
- c) Sampling frame is missing
- d) Only small sample size is needed

Q.13. Which of the following is a probability sampling technique?

- a) Convenience sampling
- b) Purposive sampling
- c) Stratified sampling
- d) Quota sampling

Q.14. Aptitude tests are designed to:

- a) Measure acquired knowledge
- b) Assess potential to learn
- c) Evaluate personality traits
- d) Check factual recall

Q.15. Reliability refers to:

- a) Accuracy of a test
- b) Consistency of results
- c) Depth of content coverage
- d) Student performance

Q.16. Difficulty index is also known as:

- a) P-value
- b) R-value
- c) D-value
- d) C-value

Q.17. The arithmetic mean is defined as:

- a) The middle value in an ordered series
- b) The value that occurs most frequently
- c) The sum of values divided by number of values
- d) The difference between highest and lowest values

Q.18. A difficulty index of 0.90 indicates that the item is:

- a) Very easy
- b) Very difficult
- c) Moderately difficult
- d) Faulty

Q.19. A validity coefficient of 0.80 indicates:

- a) Low validity
- b) Moderate validity
- c) High validity
- d) No validity

Q.20. The mode is:

- a) The average of first and last values
- b) The value occurring most frequently
- c) Always equal to the mean
- d) Always equal to the median

Q.21. The median of 5, 7, 9, 11, 13 is:

- a) 7
- b) 9
- c) 11
- d) 10

Q.22. In a 2x 3 factorial design, the total number of experimental conditions is:

- a) 2
- b) 3
- c) 5
- d) 6

Q.23. A 2 x 4 factorial design has how many main effects?

- a) 1
- b) 2
- c) 3
- d) 4

Q.24. Complete the series. A, C, E, G, ?

- a) H
- b) K
- c) J
- d) T

Q.31. The FSSAI has specified that sodium benzoate as a preservative in carbonated beverages should not exceed:

- a) 50 ppm
- b) 100 ppm
- c) 120 ppm
- d) 150 ppm

Q.32. According to FSSAI standards, the minimum percentage of total soluble solids (TSS) in jam shall be:

- a) 55%
- b) 65%
- c) 68%
- d) 70%

Q.33. The maximum peroxide value (meq O₂/kg fat) for refined oils permitted by FSSAI is:

- a) 2.0
- b) 5.0
- c) 10.0
- d) 15.0

Q.34. The main purpose of tempering in wheat milling is:

- a) Increasing protein content
- b) Decreasing germ viability
- c) Conditioning endosperm and bran for better separation
- d) Reducing moisture to safe storage level

Q.35. The lipoxygenase enzyme in soybean is mainly responsible for:

- a) Hydrolysis of starch
- b) Formation of resistant starch
- c) Conversion of sucrose into glucose and fructose
- d) Generation of beany flavor through oxidation of polyunsaturated fatty acids

Q.36. In oil refining, winterization is carried out to:

- a) Remove phospholipids
- b) Separate waxes and high melting triglycerides
- c) Reduce free fatty acids
- d) Deodorize the oil

Q.37. Golden Rice, a genetically modified crop, is enriched with:

- a) B-carotene
- b) Vitamin D
- c) Iron
- d) Vitamin K

Q.38. The main advantage of immobilized enzymes in food biotechnology is:

- a) Increased activity of the enzyme
- b) Unlimited stability
- c) Reusability and continuous operation
- d) Ability to function without cofactors

Q.39. Which type of fat is considered the most harmful for heart health?

- a) Trans fats
- b) Unsaturated fats
- c) Saturated fats
- d) Omega-3 fats

Q.40. The deficiency of Vitamin D leads to which disease in children?

- a) Rickets
- b) Scurvy
- c) Beriberi
- d) Pellagra

Q.41. Which of the following is a water-soluble vitamin?

- a) Vitamin A
- b) Vitamin D
- c) Vitamin C
- d) Vitamin F

Q.42. Which of the following best describes active packaging?

- a) Packaging that only provides a physical barrier
- b) Packaging that interacts with food or environment to extend shelf life
- c) Packaging that changes its shape with temperature
- d) Packaging that only protects from physical damage

Q.43. Which of the following is an example of biodegradable packaging material?

- a) PET
- b) LDPE
- c) PVC
- d) PLA

Q.44. Which of the following is the first stage of the new product development process?

- a) Commercialization
- b) Idea generation
- c) Product development
- d) Market testing

Q.45. Test Marketing in NPD means:

- a) Launching the product nationwide
- b) Testing the product in a limited geographic area
- c) Testing raw materials for suitability
- d) Conducting laboratory analysis of the product

Q.46. In spray drying, the most important factor affecting powder quality is:

- a) Particle size
- b) Atomizer speed
- c) Feed concentration
- d) Inlet air temperature

Q.47. The driving force for mass transfer during osmotic dehydration of fruits is:

- a) Difference in water activity between food and osmotic solution
- b) Difference in pressure between cells
- c) Capillary action in the tissue
- d) Diffusion of solute into the food

Q.48. Which number is used to determine whether a food fluid is in laminar or turbulent flow?

- a) Prandtl number
- b) Schmidt number
- c) Reynolds number
- d) Nusselt number

Q.49. Which advanced microscopic technique is used for food structure and surface morphology studies?

- a) Scanning Electron Microscopy
- b) UV Microscopy
- c) Bright-field Optical Microscopy
- d) Atomic Absorption Microscopy

Q.50. Which type of chromatography is most suitable for separating proteins and enzymes in food analysis?

- a) Gas Chromatography
- b) Supercritical Fluid Chromatography
- c) Thin Layer Chromatography
- d) Size Exclusion Chromatography



- Rough Work -