1818/PNFT01 NOVEMBER 2016

ADVANCED NUTRITION

(For those who joined in July 2013 – 2014 onwards)

Time : Three hours Maximum : 100 marks

PART A — (5 × 5 = 25 marks)

Answer any FIVE out of Seven questions.

All questions carry equal marks.

1. Mention ICMR recommended dietary allowance of energy. Write the factors affecting total energy requirement.

2. Write notes on the functions of carbohydrates.

3. Explain the significance of n-6 fatty acids in health.

4. Describe the requirement of protein for all age groups.

5. Discuss the role of retinol in the visual cycle.

6. Mention the physiological functions of sodium and potassium.

7. Write the functions, sources and balance of water.

PART B — (5 × 15 = 75 marks)

Answer any FIVE out of Seven questions.

All questions carry equal marks.

8. Enumerate Bomb Caloriemeter. Differentiate between physiological fuel value and gross fuel value.

9. Discuss the role of fibre in human nutrition.

10. Narrate the digestion, absorption and transport of fat.

11. Narrate the methods of evaluating protein quality.

12. Explain the clinical manifestations of Thramin deficiency and mention its prevention measures.

13. Discuss the preventive measures taken to combat micronutrient malnutrition.

14. Narrate the role of biological buffers in Acid-Base balance.

1819/PNFT02 NOVEMBER 2016

ADVANCED FOOD SCIENCE AND CHEMISTRY

Time : Three hours Maximum : 100 marks

PART A — (5 × 5 = 25 marks)

Answer any FIVE out of Seven questions.

1. Write short notes on :
   (a) Colloids.
   (b) Organic food components.
2. Write the types of food gels.
3. Explain briefly the functional properties of sugars.
4. Point out the physical and chemical properties of lipids.
5. Write short notes on :
   (a) Denaturation of proteins.
   (b) Maillard browning.
6. What is the role of flavours in food and write down their industrial applications.
7. Enumerate the role of colours in food industry.

PART B — (5 × 15 = 75 marks)

Answer any FIVE questions.

8. Explain in detail the uses of emulsifiers and gels in food industry.
9. Describe the functional properties of proteins and modified proteins and their features.
10. How rancidity is formed in fats and how do you prevent it?
11. What are free and bound water and explain the role of water in foods?
12. Enumerate the role and importance of enzymes such as Amylases, Proteases, Lipases and hydrolases in food processing.
13. What are food additives? Explain their types and role in food industry.
14. What are leavening agents, give their classifications and its role in food processing.

1820/PNFT03 NOVEMBER 2016

FOOD SAFETY AND QUALITY CONTROL

(For those who joined in July 2013)

Time : Three hours Maximum : 100 marks

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

1. Describe about objective type of sensory tests.

2. Explain the consumer acceptability using sensory evaluation.

3. Discuss some methods used to detect adulterants in foods.

4. What is Quality plan? Explain.

5. Bring out the objectives and role of Consumer Protection Act.

6. Write the concepts of quality control.

7. Discuss the qualities required by panel members involved in sensory evaluation.

PART B — (5 × 15 = 75 marks)

Answer any FIVE questions.

8. Describe about instruments used to evaluate food product and texture.

9. Discuss about rating tests with example.

10. How can you select the sensory panalist? Explain the general testing conditions.

11. Write a brief note on incidental adulterant and explain how it can be prevented.

12. Describe the steps of quality assurance programme.

13. Enumerate the functions and benefits of HACCP.

14. What are the food standards for fruit products? Explain.

1821/PNFT04 NOVEMBER 2016

FOOD TECHNOLOGY — I

Time : Three hours Maximum : 100 marks

SECTION A — (5 × 5 = 25 marks)

Answer any FIVE questions out of Seven.

1. Brief on the steps in processing oats.
2. Discuss the effect of processing on the quality characteristics of rice.
3. Explain the production of soya protein isolate.
4. Discuss about tunnel driers.
5. Write about any two methods of packaging fruits.
6. How will you determine the end point of jellies?
7. Write about the methods of dehydration of onion.

SECTION B — (5 × 15 = 75 marks)

Answer any FIVE questions out of Seven.

8. Elaborate on the steps in wheat milling.
9. Explain the different methods of parboiling and give its advantages.
10. Discuss about the unit operations for seed treatment prior to oil extraction.
11. Explain the problems encountered in freezing specific fruits and vegetables.
12. Write about the methods of handling, grading and cleaning fruits for processing.
13. Give the preparation of papaya preserve and amla candy.
14. Discuss in detail about the processing of ginger and extraction of ginger oil.

1822/PNFT05 NOVEMBER 2016

ANALYTICAL INSTRUMENTATION

Time : Three hours Maximum : 100 marks

SECTION A — (5 × 5 = 25 marks)

Answer any FIVE questions out of Seven questions.

1. How is TLC superior to paper chromatography?

2. Explain the term Rf value and give any three advantages of HPLC.

3. Explain the principles of electrophoresis and write about any two support materials used in electrophoresis.

4. Write the applications of PAGE.

5. What are the basic components of an ordinary centrifuge?

6. List the difference between spectrophotometer and colorimeter.

7. What are the biological effects of ionizing radiation?

SECTION B — (5 × 15 = 75 marks)

Answer any FIVE questions out of Seven questions.

8. Explain the mechanism of application of ion exchange chromatography.

9. Discuss about different types of gel electrophoresis.

10. Elaborate on the principles and application of fluorimetry.

11. Give the basic requirements for the conduct of microbiological assays.

12. Elaborate on the applications of spectrophotometer.

13. Give an account on scintillation counter and its uses.

14. Explain the applications and principles of NIR.

1823/PNFT06 NOVEMBER 2016

RESEARCH METHODOLOGY AND BIOSTATISTICS

Time : Three hours Maximum : 100 marks

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

1. Write a note on basic research and its application.

2. Explain the meaning and role of hypothesis in research.

3. Discuss on scaling methods in brief.

4. List the general rules for constructing diagrams.

5. What are the advantages and disadvantages of mean?

6. Calculate the Karl Pearsons coefficient of correlation between A and B.

A :	39	65	62	90	82	75	25	98	36	78
B :	47	53	58	86	62	68	60	91	51	84

7. What is the meaning of ANOVA? Explain its types.

PART B — (5 × 15 = 75 marks)

Answer any FIVE questions.

8. Explain any three types of research design in detail.

9. Discuss in detail on random sampling methods.

10. Differentiate between primary and secondary data collecting methods.

11. Explain the various types of diagrams with examples.

12. Calculate the mean, median and standard deviation from the following data :

Wage (Rs. '000) :	0-10	10-20	20-30	30-40	40-50
No. of workers :	12	17	23	39	16

13. Discuss the rules of probability and its applications with examples.

14. (a) State the properties of normal distribution.

    (b) In a normal distribution, 30% of the items are under 50 and 10% are over 86. Find the mean and standard deviation of the distribution [Table value of area for Z = 2.0 is 0.4772, Z = 1.28 is 0.3997 and Z = 0.84 is 0.2995].

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1824/PNFT07 NOVEMBER 2016

FOOD PRODUCT DEVELOPMENT AND MARKETING

Time : Three hours Maximum : 100 marks

SECTION A — (5 × 5 = 25 marks)

Answer any FIVE questions out of Seven questions.

1. Define New food product and causes of food product success in a market.

2. Discuss the manufacturer's criteria for new food product development.

3. Discuss the need for consumer trial for a newly developed product.

4. Give the marketing characteristics of the product.

5. Discuss the internal sources of new product ideas.

6. Discuss the financial and technical constraints faced by the manufacturer in product development process.

7. What do you understand by term "Commercialization of the product"? Explain.

SECTION B — (5 × 15 = 75 marks)

Answer any FIVE questions out of Seven questions.

8. Explain the general characteristics of new food products.

9. Discuss the phases in food product development process.

10. What is consumer research? Explain its scope and importance.

11. Discuss the steps involved in standardization of product formulation and design.

12. Explain the classification of market in detail.

13. Discuss various pricing methods in detail.

14. Explain the techniques used to assess the Quality of newly developed extruded products.

1825/PNFT08 NOVEMBER 2016

FOOD TECHNOLOGY – II

Time : Three hours Maximum : 100 marks

SECTION A — (5 × 5 = 25 marks)

Answer any FIVE questions.

1. Write a note on toned and double toned milk.
2. Explain briefly on flavoured milk and recombined milk.
3. Describe the canning of fish.
4. Describe the method of smoking of fish.
5. Explain the grading of meat.
6. Write a note on Ageing of meat.
7. Explain the composition of Egg.

SECTION B — (5 × 15 = 75 marks)

Answer any FIVE questions.

8. Explain the processing of milk.
9. How is cheese manufactured?
10. Discuss on the by – products of fish.
11. Enumerate the freezing technology of fish.
12. Describe the post-mortem changes in meat and the factors affecting it.
13. Describe the processing of poultry.
14. Write a note on egg products.