Booklet Series

A

No. of Printed Pages : 16

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617039

A

PAPER CODE

PAPER/II-06/FOOD & NUTRITION

Roll No. : _____

Name of the Candidate : _____

Test Duration : 03 Hours ***Total Questions : 100*** ***Total Maximum Marks : 200***

INSTRUCTIONS TO CANDIDATES

1. Candidates will be admitted to the Examination Hall/Room on production of their Admit Card and Original ID such as **EPIC/Aadhaar/Driving License** with a view to establish the true identity of the candidate.
2. Candidates shall reach the venue of examination at least 30 minutes in advance and admission will be refused to a candidate who is late by 10 minutes from the start of the examination.
3. No candidate shall be permitted to leave the Examination Hall/Room until the time for the examination is over or until permitted to do so but not until the half of the allotted time.
4. Candidates must use a **BLUE/BLACK** ball point pen ONLY to make entries on the OMR Answer Sheet.
5. The candidates should not bring any articles (other than those specified above) such as books, notes, loose sheets, mobile phones, pagers, digital diaries, calculators, smart watches, etc. inside the Examination Hall/Room. Any candidate found in possession of the said articles will be liable to be de-barred from applying all future examinations to be conducted by the Board.
6. After receiving the Test Booklet with OMR inserted, the candidates may pull out the OMR Answer Sheet and fill in the necessary details. However the candidates are not allowed to break open the seal of the Test Booklet until the invigilator informs them to do so.
7. Mark carefully your Roll Number, Question Booklet Code and Booklet Series on the OMR Answer Sheet and append signature at the appropriate place. Write your Roll Number and **Name in the Question Booklet**. In the absence of the Roll Number and Question Booklet Series on the OMR Answer Sheet, it may NOT be evaluated.
8. The entire Test is of Objective Type Questions comprising 100 questions.
9. Candidates must check that the Question Booklet contains 100 multiple choice questions. If any discrepancy found, report to the invigilator immediately.
10. Every question carries a total of 2 marks each. Candidates will also keep in mind that there is negative marking of $1/3^{rd}$ for every wrong answer.
11. Rough work may be done on the space provided in this Question Booklet, but not on the OMR Answer Sheet.
12. In the event of a mistake made in marking the Roll Number in the OMR Answer Sheet or the OMR Series the candidates will not be given a new OMR Answer Sheet but he/she will be allowed to use whitener or correcting fluid for correction of the Roll Number and the Booklet Series only.
13. **Change of answer will not be permitted in the OMR Answer Sheet. Using of correcting fluid (of any sort) will be treated as wrong attracting negative marking.**
14. The candidates must abide by such instructions as may be specified on the cover of the Answer Paper or instructions to candidates given at the back of the Admit Card. If a candidate fails to do so or indulges in improper conduct, he/she will render himself/herself liable to expulsion from the examination or such other punishment as the Board deemed fit to impose.
15. At the end of the Test, candidates must submit the OMR Answer Sheet to the invigilator on duty. Candidates shall be allowed to take their Question Booklet only after the end of the examination session.
16. Any candidate found to be intoxicated with alcohol and/or psychotropic substances will be expelled from the Examination Hall/Room.
17. Examination centre once opted cannot be changed.

PLEASE REFER THE BACKSIDE OF THE QUESTION BOOKLET FOR MORE INSTRUCTIONS.

SEAL

1. How do panel members typically analyse food products in sensory evaluation ?

(A) Through casual tasting and personal opinion

(B) By observing consumer trends and preferences

(C) Through properly planned experiments and statistical analysis of their judgements

(D) By comparing prices and nutritional values of food products

2. Which of the following are the four main types of sensory tests used for food evaluation ?

(A) Taste tests, smell tests, texture tests, colour tests

(B) Preference tests, ranking tests, emotional tests, physical tests

(C) Difference tests, rating tests, sensitivity tests, descriptive tests

(D) Visual tests, taste tests, nutritional tests, chemical tests

3. What is the name of the thin gelatinous material mucoprotein that covers the small holes on an eggshell ?

(A) Yolk membrane

(B) Albumin coat

(C) Shell membrane

(D) Cuticle or bloom

4. What is a male chicken, usually under 10 months of age with coarse skin called ?

(A) Cockerel

(B) Hen

(C) Stag

(D) None of the above

5. What are food exchange lists primarily used for in dietetics ?

(A) To group foods based on taste and texture

(B) To categorize foods according to their vitamins and minerals

(C) To group measured foods with the same calorific value and similar protein, fat, and carbohydrates

(D) To classify foods by their geographical origin

6. What is the causative agent of tuberculosis (TB) ?

(A) Staphylococcus aureus

(B) Bacillus Mycobacterium tuberculosis

(C) Escherichia coli

(D) Streptococcus pneumoniae

7. Which of the following are water-soluble vitamins ?

(A) C, B-complex

(B) A, D, E, K

(C) A, C, E, K

(D) B, D, E, K

8. What happens during the process of making white flour (maida) ?
(A) The bran and germ are separated
(B) The flour is enriched with additional vitamins
(C) The entire grain is ground into flour, including the bran and germ
(D) None of the above

9. Carrots are rich in which nutrient ?
(A) Calcium
(B) Carotene
(C) Iron
(D) None of the above

10. Which of the following is a common method used to extract vegetable oil ?
(A) Filtration
(B) Pressing processes
(C) Fermentation
(D) Freezing

11. What percentage of an adult's total body weight is made up of water ?
(A) 25 – 35%
(B) 40 – 50%
(C) 70 – 85%
(D) 55 – 68%

12. What is one of the key functions of water in the human body ?
(A) It acts as a lubricant and reduces friction between joints
(B) It provides energy for muscle contraction
(C) It builds bone density
(D) It aids in the absorption of fat-soluble vitamins

13. At pH 6.6, casein is predominantly found in which form ?
(A) Free amino acids
(B) Calcium caseinate
(C) Casein hydrochloride
(D) Sodium caseinate

14. What is the role of rennin in milk ?
(A) To break down lactose into glucose
(B) To coagulate or curdle the milk
(C) To increase the pH of milk
(D) To convert proteins into amino acids

15. What are nucleic acids composed of ?
(A) Nucleotides held by 3′ and 5′ phosphate bridges
(B) Fatty acids held by peptide bonds
(C) Amino acids held by hydrogen bonds
(D) Monosaccharides joined by glycosidic bonds

16. Which of the following are the three main components that contribute to the flavour of food ?
(A) Taste, temperature and colour
(B) Odour, texture and temperature
(C) Odour, taste and mouth feel
(D) Taste, colour and portion size

17. Which of the following is a primary function of food in the human body ?

(A) Energy yielding

(B) Body building

(C) Protection and Regulation

(D) All the above

18. Why is the food pyramid shaped like a pyramid ?

(A) To guide for the amount and types of foods to be included in the daily diet

(B) To show food groups in alphabetical order

(C) To make it look appealing

(D) To match traditional cooking methods

19. What is grilling in cooking ?

(A) Cooking food by immersing it in boiling water

(B) Placing food below, above or between a red-hot surface

(C) Cooking food using microwave radiation

(D) Freezing food at high speed

20. Long-term consumption of grains contaminated with aflatoxins has been linked to which health condition ?

(A) Heart disease

(B) Liver cancer

(C) Diabetes

(D) Kidney stones

21. What naturally accumulates on the skins of grapes as they mature, aiding in wine fermentation ?

(A) Lactic acid bacteria

(B) Mold spores

(C) Acetic acid bacteria

(D) Wine yeast *Saccharomyces ellipsoideus*

22. In food, what holds the bound water within living cells ?

(A) Only proteins

(B) Sugars and acids

(C) Water-soluble vitamins

(D) Proteins, polysaccharides and fats

23. What is hydrolysis in the context of fats ?

(A) The freezing of fats

(B) The breakdown of fats into free fatty acids and glycerol

(C) The combination of fats with water to form new compounds

(D) The evaporation of fat

24. What is an emulsion ?

(A) A mixture of solid and gas

(B) A system of one liquid dispersed in another immiscible liquid

(C) A solution of two solids

(D) A gas dissolved in a liquid

25. In a non-pregnant woman, the total plasma volume averages about 2600 mL. By 34 weeks of pregnancy, the plasma volume increases by approximately how much ?

(A) 10%

(B) 25%

(C) 50%

(D) 75%

26. According to the ICMR (Indian Council of Medical Research), what is the recommended daily dietary allowance of iron for a pregnant woman ?

(A) 15 mg/day
(B) 25 mg/day
(C) 35 mg/day
(D) None of these

27. What is the earliest symptom of Vitamin A deficiency ?

(A) Night blindness
(B) Scurvy
(C) Rickets
(D) Fatigue

28. Why does an infant need exposure to sunlight ?

(A) To help in synthesize Vitamin D from a precursor in the skin
(B) To boost iron levels
(C) To enhance calcium absorption
(D) To stimulate growth hormones

29. What does the term diverticulosis refer to in medical terminology ?

(A) Inflammation of the small intestine
(B) Ulcer formation in the stomach lining
(C) Sac-like herniations of the colonic wall
(D) Thickening of the intestinal mucosa

30. Which of the following best describes cirrhosis ?

(A) Inflammation of the gallbladder causing bile obstruction
(B) Enlargement of the spleen due to infection
(C) Destruction of the liver cells due to necrosis, fatty infiltration, fibrosis and nodular regeneration
(D) Accumulation of fluid in the lungs affecting liver function

31. What toxic pigment is found in the pigment glands of cotton seed endosperm ?

(A) Aflatoxin
(B) Gossypol
(C) Cyanidin
(D) Tannin

32. What pigment is primarily responsible for the red color in fresh meat ?

(A) Hemoglobin
(B) Melanin
(C) Chlorophyll
(D) Myoglobin

33. Which of the following is not typically used in the curing process of meats ?

(A) Common salt
(B) Methylene
(C) Sodium nitrate or nitrite
(D) None of these

34. How does the fat content of fish compare to meat and poultry ?

(A) Fish contains more fat than meat and poultry

(B) Fish contains less fat than meat and poultry

(C) Fish contains the same amount of fat as meat and poultry

(D) Fish contains no fat at all

35. How can clarified lime juice be kept free from non-enzymatic browning during processing ?

(A) By boiling at high temperatures

(B) By exposing it to sunlight for drying

(C) By vacuum evaporation at 30 – 50°C

(D) None of the above

36. What is the approximate specific gravity of oils and fats ?

(A) 1.0

(B) 1.2

(C) 0.5

(D) 0.9

37. What is released in large quantities during alcoholic fermentation ?

(A) Oxygen

(B) Nitrogen

(C) Carbon dioxide

(D) Hydrogen

38. What is the primary purpose of the reception room in a testing laboratory ?

(A) To store testing samples

(B) Reception room where the panel members meet the person in charge of the laboratory and get acquainted with the type of the samples to be tested

(C) To perform chemical analysis

(D) To store laboratory equipment

39. Favism is a disease characterized by

(A) Haemolytic anaemia

(B) Megaloblastic anaemia

(C) Iron deficiency anaemia

(D) Aplastic anaemia

40. What is the effect of heat treatment during cooking of pulses ?

(A) It helps in loosening the intercellular matrix of the middle lamella sufficient to allow separation of individual cells

(B) It increases the protein content of pulses

(C) It enhances the vitamin C content

(D) It prevents the absorption of water by the pulses

41. Which of the following are lipoproteins found in egg yolk ?

(A) Caseins and albumins

(B) Lipovitellins and lipovitellinin

(C) Globulins and fibrinogens

(D) Collagens and keratins

42. Collagen is most abundant in which of the following animal tissues ?
(A) Muscle and fat
(B) Tendons, skin, bone and vascular system
(C) Nervous tissue and brain
(D) Red blood cells and liver

43. Why do roots and tubers generally contain more calories than green leafy vegetables ?
(A) They have a higher water content
(B) They contain more fiber
(C) They are rich in starches
(D) They have more vitamins

44. A balanced diet should ideally provide what percentage of total daily calories from carbohydrates, protein and fat, respectively ?
(A) 60 – 70% carbohydrates, 10 – 12% protein, 20 – 25% fat
(B) 50 – 55% carbohydrates, 15 – 20% protein, 30 – 35% fat
(C) 40 – 50% carbohydrates, 25 – 30% protein, 20 – 25% fat
(D) 55 – 65% carbohydrates, 20 – 25% protein, 10 – 15% fat

45. Which condition is described as the passage of firm or hard, pellet-like stools at infrequent and long intervals, often with difficulty in expulsion ?
(A) Diarrhoea
(B) Constipation
(C) Flatulence
(D) None of these

46. What is dysentery best defined as ?
(A) Constipation followed by bloating
(B) Frequent urination with abdominal pain
(C) Watery stools with undigested food
(D) Diarrhoea with visible blood in the stool

47. Which of the following is a function of fats in the body ?
(A) They provide insulation but do not aid in vitamin absorption
(B) They carry water-soluble vitamins into the body
(C) They are only used for energy storage and have no role in vitamin transport
(D) They carry fat-soluble vitamins and help in their absorption

48. Each gram of oil or fat supplies _____ calories.
(A) 4 calories
(B) 7 calories
(C) 11 calories
(D) 9 calories

49. What are the major contributing factors to the increasing rates of overweight and obesity among adolescents ?
(A) Excessive sleep and water intake
(B) Poor dietary habits and decreased physical activity
(C) Increased academic pressure and outdoor games
(D) Consumption of traditional home-cooked meals

50. What is osteoporosis primarily characterized by ?

(A) Increased bone density and joint stiffness

(B) Inflammation of the joints and muscles

(C) Low bone density and micro-architectural deterioration of bone tissue

(D) Excess calcium deposits in bones

51. How do babies receive an excellent supply of calcium ?

(A) From iron supplements

(B) From fruit juices

(C) From exposure to sunlight

(D) From their mother's milk

52. What condition result in children due to a severe deficiency of calcium ?

(A) Scurvy

(B) Anemia

(C) Goiter

(D) Rickets

53. What is the approximate energy (calorie) value of human breast milk ?

(A) 50 kcal/100 ml

(B) 80 kcal/100 ml

(C) 70 kcal/100 ml

(D) None of these

54. Which of the following best defines preterm babies ?

(A) Babies born before 37 weeks of gestation and usually underweight due to shorter duration of gestation

(B) Babies born after 40 weeks of gestation and weighing less than 2.5 kg

(C) Babies born at exactly 37 weeks with normal weight

(D) Babies born after 42 weeks with complications

55. Which of the following sugars is the most soluble in water ?

(A) Glucose

(B) Sucrose

(C) Lactose

(D) Fructose

56. Which of the following best describes the physical properties of polyols ?

(A) Sticky and hydrophobic

(B) Colored and insoluble

(C) Gaseous and sweet-smelling

(D) White crystalline, slightly hygroscopic, water soluble powders

57. What is the key characteristic of the High Temperature Short Time (HTST) pasteurization method ?

(A) It raises the temperature of milk to at least 72°C for 15 seconds

(B) It involves heating the milk to at least 85°C for 30 minutes

(C) It involves freezing milk to preserve nutrients

(D) It heats milk to 60°C for 60 seconds

58. How does food preservation improve the nutrition of people ?
(A) By increasing the availability of foods, thus improving nutrition
(B) By reducing the variety of foods available
(C) By decreasing the shelf life of foods
(D) By making food more expensive to purchase

59. What is the method of tube feeding called when a tube is passed through the nose into the stomach or duodenum ?
(A) Intravenous feeding
(B) Orogastric feeding
(C) Nasogastric feeding
(D) Parenteral feeding

60. What does Total Parenteral Nutrition (TPN) refer to ?
(A) Providing nutrients through a feeding tube into the stomach
(B) Supplying only vitamins and minerals orally
(C) Provision of all essential nutrients for homeostasis and growth through the parenteral route
(D) A high-protein oral diet given post-surgery

61. High concentrations of sugar are commonly used to preserve which of the following foods ?
(A) Pickles
(B) Jams and jellies
(C) Meat products
(D) Fresh vegetables

62. Which of the following sugars is more hygroscopic ?
(A) Maltose
(B) Fructose
(C) Lactose
(D) None of these

63. What materials are commonly used as the base for Thin Layer Chromatography (TLC) plates ?
(A) Paper, plastic and copper
(B) Glass, aluminium or polyethylene
(C) Wood, steel and glass
(D) Cotton, nylon and paper

64. What does AAS stand for in analytical chemistry ?
(A) Atomic Analysis System
(B) Atomic Absorption Spectroscopy
(C) Active Absorption Study
(D) Advanced Atomic Screening

65. Why are calcium and phosphorus required in comparatively large amounts in the body ?
(A) To aid digestion and metabolism
(B) To regulate blood sugar levels
(C) To maintain vision and skin health
(D) To help in normal growth and development of bones and teeth

66. What is the primary role of iron in the human body ?
(A) To strengthen bones and teeth
(B) To assist in nerve signal transmission
(C) To aid in the breakdown of carbohydrates
(D) To help in the formation of haemoglobin, the red pigment in blood

67. What does the term stimulus detection threshold refer to in sensory evaluation ?
(A) The point at which a stimulus becomes unpleasant
(B) The maximum level of stimulus a person can tolerate
(C) The magnitude of a stimulus at which a transition occurs from no sensation to sensation
(D) The average preference rating of a stimulus among panel members

68. The measurement of hydrogen ion concentration in a solution can be determined using which of the following instruments ?
(A) Thermometer
(B) Barometer
(C) pH meter
(D) Spectrophotometer

69. What is the name of the thick, yellowish fluid secreted from the mammary glands during the first 2 – 3 days after delivery ?
(A) Lactose
(B) Colostrum
(C) Transitional milk
(D) Mature milk

70. What was one of the main objectives behind initiating school lunch programmes in India ?
(A) To increase the income of teachers
(B) To reduce school holidays
(C) To promote the social and economic advancement of the country
(D) To introduce new food recipes in schools

71. What is the scientific name of the cacao tree ?
(A) *Theobroma cacao*
(B) *Coffea arabica*
(C) *Camellia sinensis*
(D) *Piper nigrum*

72. What is stock ?
(A) A dry seasoning mix
(B) A method of frying food
(C) The liquid obtained from long cooking of meat, poultry, fish, or vegetables in water
(D) None of the above

73. What does NMR stands for in NMR spectroscopy ?
(A) Nuclear Magnetic Radiation
(B) Neutral Mass Resonance
(C) Nuclear Magnetic Resonance
(D) Neutron Molecular Radiography

74. What is the typical temperature at which water boils under normal atmospheric pressure ?
(A) 90°C
(B) 100°C
(C) 120°C
(D) 80°C

75. Which toxin is produced in groundnuts by *Aspergillus flavus* ?
(A) Aflatoxin
(B) Toxin A
(C) Toxin B
(D) BoNTs

76. What is the advantages of blanching ?
(A) Peel can be removed easily
(B) Microorganisms present on the surface are partially removed
(C) Blanching causes better exposure of pigment, hence improves the colour of the food product
(D) All the above

77. What causes the bitterness in citrus fruits ?
(A) Citric acid
(B) Limoninoids and flavanone glycosides
(C) Sucrose and glucose
(D) Vitamin C

78. To which biological kingdom do mushrooms belong ?
(A) Plantae
(B) Animalia
(C) Protista
(D) Fungi

79. In the slow-freezing process, how are foods preserved ?
(A) Foods are placed in refrigerated rooms at temperatures ranging from – 4°C to – 29°C
(B) Foods are quickly frozen at temperatures of 10°C
(C) Foods are dried to remove all moisture
(D) Foods are canned in airtight containers at high temperatures

80. According to the Food Safety and Standard Act, 2011 what should fruit squashes contain at a minimum ?
(A) 25% fruit juice and 40% solids
(B) 10% fruit juice and 30% solids
(C) 15% fruit juice and 50% solids
(D) 20% fruit juice and 35% solids

81. What can result from a lack of iron in the diet ?
(A) Rickets
(B) Scurvy
(C) Night blindness
(D) Anaemia due to insufficient hemoglobin

82. Which of the following are fat-soluble vitamins ?
(A) A, D, E, K
(B) B, C, D, E
(C) B, D, K, C
(D) A, B, C, E

83. What are carbohydrates called when their molecules consist of only one sugar unit ?
(A) Disaccharides
(B) Polysaccharides
(C) Oligosaccharides
(D) Monosaccharides

84. A diet lacking in fiber can cause which of the following symptoms ?
(A) Constipation
(B) Diarrhea
(C) Frequent urination
(D) Excessive sweating

85. At what temperature the poaching is performed ?
(A) 30°C – 35°C
(B) 50°C – 55°C
(C) 40°C – 45°C
(D) 80°C – 85°C

86. The endosperm is surrounded by one or more layers of cells known as
(A) Aleurone cell layer
(B) Scutellum
(C) Embryo
(D) None of these

87. What is a disaccharide made of ?

(A) Two monosaccharide units held together by a glycosidic bond

(B) One monosaccharide unit and a fatty acid

(C) Two amino acids connected by a peptide bond

(D) A monosaccharide and a protein

88. What characterizes complex (or compound) lipids ?

(A) They are esters of fatty acids with alcohols containing additional groups like phosphate, nitrogenous base, carbohydrate or protein

(B) They are composed solely of glycerol and water

(C) They contain only saturated fatty acids

(D) None of the above

89. What is hepatic encephalopathy and what causes it ?

(A) A type of liver cancer caused by viral infections

(B) A cardiovascular condition linked to fatty liver disease

(C) A condition marked by neurologic disturbances caused by the entry of nitrogen-containing substances like ammonia into the cerebral circulation

(D) An autoimmune disease resulting in liver shrinkage

90. What are common side effects of radiation to the oropharyngeal area ?

(A) Hair loss and skin rashes

(B) Mucositis, dysphagia

(C) Hearing loss and eye irritation

(D) None of the above

91. How does regular physical activity help to improve body composition ?

(A) By increasing energy expenditure and improving appetite regulation

(B) By increasing water retention

(C) By directly increasing food intake

(D) By slowing down metabolism

92. During exercise, ATP is primarily produced through the breakdown of which of the following substances ?

(A) Glucose, fatty acids and amino acids

(B) Vitamins and minerals

(C) Water and electrolytes

(D) Fiber and starch

93. What are the building blocks of proteins ?

(A) Fatty acids

(B) Monosaccharides

(C) Nucleotides

(D) Amino acids

94. What condition is caused by a severe deficiency of protein, especially in small children ?

(A) Rickets

(B) Scurvy

(C) Kwashiorkor

(D) None of the above

95. Who is the professional responsible for planning and supervising the preparation of therapeutic or other specialized diets for individuals ?

(A) Chef

(B) Nutritionist

(C) Dietitian

(D) Pharmacist

96. Who were among the key founders of the Indian Dietetic Association, with one serving as secretary ?

(A) Dr. M. S. Swaminathan and Dr. A. P. J. Abdul Kalam

(B) C. Gopalan and Prof. Kalyan Bagchi

(C) Dr. Verghese Kurien and Prof. M. K. Bhan

(D) Dr. B. R. Ambedkar and Dr. H. K. Sen

97. How are carbohydrates formed in plants ?

(A) By the absorption of minerals from the soil

(B) By the breakdown of proteins in the roots

(C) From oxygen and nitrogen during respiration

(D) From carbon dioxide and water by photosynthesis using sunlight

98. What is an enzyme inhibitor ?

(A) A molecule that increases enzyme activity

(B) A substance that binds with a substrate and speeds up reaction

(C) A protein that enhances enzyme specificity

(D) A substance that binds with an enzyme and decreases its catalytic activity

99. What is the main purpose of carbohydrate loading in athletes ?

(A) To reduce muscle fatigue by increasing protein intake

(B) To decrease water weight before competition

(C) To increase the glycogen-storing capacity of muscles

(D) To enhance fat metabolism during exercise

100. What are ergogenic aids commonly used by some athletes ?

(A) To treat sports-related injuries

(B) To replace the need for physical training

(C) To enhance physical performance beyond training alone

(D) To maintain hydration during exercise