

Roll No.

Question Booklet Number

O. M. R. Serial No.

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Question Booklet Number

M. Sc. (Fourth Semester)
(NEP) EXAMINATION, 2025-26

ZOOLOGY

(Human Nutrition and Therapeutics) (Elective)

Paper Code						
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Questions Booklet Series
B

Time : 1:30 Hours]

[Maximum Marks : 75

Instructions to the Examinee :

1. Do not open the booklet unless you are asked to do so.
2. The booklet contains 100 questions. Examinee is required to answer 75 questions in the OMR Answer-Sheet provided and not in the question booklet. All questions carry equal marks.
3. Examine the Booklet and the OMR Answer-Sheet very carefully before you proceed. Faulty question booklet due to missing or duplicate pages/questions or having any other discrepancy should be got immediately replaced.

परीक्षार्थियों के लिए निर्देश :

1. प्रश्न-पुस्तिका को तब तक न खोलें जब तक आपसे कहा न जाए।
2. प्रश्न-पुस्तिका में 100 प्रश्न हैं। परीक्षार्थी को 75 प्रश्नों को केवल दी गई OMR आन्सर-शीट पर ही हल करना है, प्रश्न-पुस्तिका पर नहीं। सभी प्रश्नों के अंक समान हैं।
3. प्रश्नों के उत्तर अंकित करने से पूर्व प्रश्न-पुस्तिका तथा OMR आन्सर-शीट को सावधानीपूर्वक देख लें। दोषपूर्ण प्रश्न-पुस्तिका जिसमें कुछ भाग छपने से छूट गए हों या प्रश्न एक से अधिक बार छप गए हों या उसमें किसी अन्य प्रकार की कमी हो, तो उसे तुरन्त बदल लें।

(Remaining instructions on the last page)

(शेष निर्देश अन्तिम पृष्ठ पर)

(Only for Rough Work)

1. Selenium functions in the body mainly act as a component of :
 - (A) Antioxidant enzymes such as glutathione peroxidase
 - (B) Hemoglobin
 - (C) Collagen
 - (D) Myosin
2. The virus responsible for poliomyelitis belongs to which family ?
 - (A) Retroviridae
 - (B) Picornaviridae
 - (C) Orthomyxoviridae
 - (D) Herpesviridae
3. The causative agent of amoebiasis is :
 - (A) *Giardia lamblia*
 - (B) *Entamoeba histolytica*
 - (C) *Plasmodium vivax*
 - (D) *Trypanosoma*
4. Which food spoilage is affected by oxidation ?
 - (A) Carbohydrates
 - (B) Proteins only
 - (C) Lipids
 - (D) Vitamins only
5. Vitamin A deficiency may also cause :
 - (A) Rickets
 - (B) Keratomalacia
 - (C) Scurvy
 - (D) Pellagra
6. Rancidity occurs in :
 - (A) Lipids
 - (B) Proteins
 - (C) Carbohydrates
 - (D) Vitamins
7. Carbohydrates chemically are :
 - (A) Polyhydroxy aldehydes or ketones
 - (B) Fatty acid esters of glycerol
 - (C) Nitrogen-containing organic acids
 - (D) Sulfur-containing organic compounds
8. The most effective public health strategy to prevent iodine deficiency disorders is :
 - (A) Vitamin tablets
 - (B) Iron injections
 - (C) Protein supplementation
 - (D) Universal salt iodization
9. Xerophthalmia is caused by the deficiency of which vitamin ?
 - (A) Vitamin A
 - (B) Vitamin B₁
 - (C) Vitamin C
 - (D) Vitamin D

10. Kwashiorkor is primarily caused by the deficiency of :
- (A) Carbohydrates
 - (B) Proteins
 - (C) Vitamins
 - (D) Minerals
11. The intermediate host of *Taenia solium* is :
- (A) Pig
 - (B) Cow
 - (C) Dog
 - (D) Goat
12. The main purpose of a pre-operative diet is to :
- (A) Increase body fat
 - (B) Prepare the patient for surgery and reduce complications
 - (C) Increase blood pressure
 - (D) Increase cholesterol level
13. Which Hepatitis is transmitted through contaminated food and water ?
- (A) Hepatitis B
 - (B) Hepatitis C
 - (C) Hepatitis A
 - (D) Hepatitis D
14. The formula to calculate body mass index (BMI) to assess obesity is :
- (A) $\text{Weight} \times \text{Height}$
 - (B) $\text{Weight} / \text{Height}^2$
 - (C) $\text{Height} / \text{Weight}^2$
 - (D) $\text{Weight} / \text{Height}$
15. Which vitamin is essential for calcium absorption and bone formation ?
- (A) Vitamin A
 - (B) Vitamin C
 - (C) Vitamin D
 - (D) Vitamin K
16. Which factor promotes food spoilage ?
- (A) Low temperature
 - (B) High moisture
 - (C) Low oxygen
 - (D) Dry conditions
17. Which mineral is associated with ATP metabolism and energy transfer reactions ?
- (A) Phosphorus
 - (B) Calcium
 - (C) Iron
 - (D) Iodine

18. Chemical present in tobacco acts on :
- (A) Digestive enzymes
 - (B) Nicotinic acetylcholine receptors in the nervous system
 - (C) Insulin receptors
 - (D) Thyroid receptors
19. Ascariasis infection occurs after humans ingest :
- (A) Eggs from contaminated food or soil
 - (B) Larvae in meat
 - (C) Bacteria in milk
 - (D) Viruses in air
20. Zinc is important in human nutrition as it helps in :
- (A) Acting as a cofactor for many enzymes
 - (B) Maintaining osmotic balance
 - (C) Transporting oxygen in blood
 - (D) Forming bone matrix
21. The major physiological function of dietary fiber is to :
- (A) Increase protein synthesis
 - (B) Enhance intestinal motility
 - (C) Provide essential fatty acids
 - (D) Increase blood glucose
22. The most common source of food-borne infections :
- (A) Contaminated food and water
 - (B) Clean utensils
 - (C) Fresh air
 - (D) Sunlight
23. The accumulation of fat around abdominal organs is known as :
- (A) Subcutaneous obesity
 - (B) Visceral obesity
 - (C) Peripheral obesity
 - (D) Genetic obesity
24. A high-calorie diet is usually recommended for patients with :
- (A) Fever and infections
 - (B) Hypertension
 - (C) Obesity
 - (D) Hyperlipidemia
25. Cholera is caused by :
- (A) *Salmonella typhi*
 - (B) *Vibrio cholerae*
 - (C) *Shigella dysenteriae*
 - (D) *Escherichia coli*
26. Hypertension refers to :
- (A) Low blood sugar
 - (B) High blood pressure
 - (C) Low blood pressure
 - (D) Excess fat deposition

27. Dysentery causing bacteria is :
- (A) *Vibrio cholerae*
 - (B) *Shigella* species
 - (C) *Salmonella typhi*
 - (D) *Bacillus anthracis*
28. Vitamin D promotes calcium absorption by :
- (A) Increasing intestinal synthesis of calcium-binding proteins
 - (B) Increasing renal calcium excretion
 - (C) Inhibiting bone mineralization
 - (D) Blocking parathyroid hormone
29. The Widal test is used for the diagnosis of :
- (A) Cholera
 - (B) Dysentery
 - (C) Hepatitis
 - (D) Typhoid fever
30. Type 2 diabetes mellitus is associated with :
- (A) Insulin resistance
 - (B) Lack of iodine
 - (C) Excess thyroid hormone
 - (D) Lack of vitamin C
31. Food spoilage is caused by :
- (A) Microorganisms
 - (B) Sunlight only
 - (C) Minerals
 - (D) Oxygen only
32. The most common symptom of cholera is :
- (A) Severe watery diarrhea
 - (B) Skin rash
 - (C) Muscle paralysis
 - (D) Headache
33. Atherosclerosis involves the accumulation of :
- (A) Calcium in bones
 - (B) Proteins in muscles
 - (C) Fatty deposits in arteries
 - (D) Water in tissues
34. Prolonged iodine deficiency during pregnancy leads to which condition in newborns ?
- (A) Marasmus
 - (B) Cretinism
 - (C) Scurvy
 - (D) Rickets

35. In elderly individuals, the energy requirement decreases due to :
- (A) Increased metabolic rate
 - (B) Reduced physical activity and lean body mass
 - (C) Increased fat digestion
 - (D) Higher hormone secretion
36. Drug-diet interaction refers to :
- (A) Effect of drugs on digestion only
 - (B) Digestion of drugs
 - (C) Interaction between vitamins and minerals only
 - (D) Interaction between food nutrients and medications
37. Potable water refers to water, that is :
- (A) Salty
 - (B) Rich in minerals
 - (C) Safe and fit for drinking
 - (D) Hot and sterilized
38. A major preventive measure against poliomyelitis is :
- (A) Antibiotics
 - (B) Vaccination (OPV/IPV)
 - (C) Antifungal drugs
 - (D) Iron supplementation
39. Goiter is commonly associated with the deficiency of :
- (A) Iodine
 - (B) Iron
 - (C) Zinc
 - (D) Calcium
40. The edema seen in kwashiorkor is caused due to :
- (A) Fat deficiency
 - (B) Low plasma protein (albumin)
 - (C) Excess carbohydrates
 - (D) Increased sodium intake
41. Which of the following carbohydrates is classified as a disaccharide ?
- (A) Glucose
 - (B) Fructose
 - (C) Lactose
 - (D) Ribose
42. Vitamin K is essential for :
- (A) Blood clotting
 - (B) Vision
 - (C) Energy metabolism
 - (D) DNA synthesis

43. Deficiency of which vitamin involved in $\text{NAD}^+/\text{NADP}^+$ synthesis results in Pellagra ?
- (A) Thiamine (B_1)
 - (B) Niacin (B_3)
 - (C) Riboflavin (B_2)
 - (D) Pyridoxine (B_6)
44. A balanced diet is the one which contains :
- (A) Only plant foods
 - (B) Equal quantities of all nutrients
 - (C) Provides all essential nutrients in appropriate proportions
 - (D) Only high-energy foods
45. Poliovirus mainly affects :
- (A) Respiratory system
 - (B) Central nervous system
 - (C) Digestive system
 - (D) Circulatory system
46. Alcoholism primarily damages :
- (A) Liver
 - (B) Brain only
 - (C) Kidney
 - (D) Skin
47. A low-carbohydrate diet is commonly recommended for :
- (A) Diabetes mellitus
 - (B) Fever
 - (C) Cirrhosis
 - (D) Hypertension
48. Refrigeration helps prevent food spoilage due to :
- (A) Increasing bacterial growth
 - (B) Slowing microbial activity
 - (C) Destroying all bacteria
 - (D) Increasing moisture
49. Parenteral nutrition means :
- (A) Feeding through the mouth
 - (B) Feeding through the gastrointestinal tract
 - (C) Intravenous administration of nutrients
 - (D) Nasal feeding only
50. High-fat diets are sometimes recommended in :
- (A) Ketogenic therapy for epilepsy
 - (B) Hypertension
 - (C) Hyperlipidemia
 - (D) Liver disease

51. The primary function of carbohydrates in the human diet is to :
- (A) Build body tissues
 - (B) Provide energy
 - (C) Regulate body temperature
 - (D) Synthesize hormones
52. Iodine is an essential component of which hormone ?
- (A) Insulin
 - (B) Adrenaline
 - (C) Cortisol
 - (D) Thyroxine
53. Therapeutic nutrition primarily refers to :
- (A) Nutrition for athletes
 - (B) Diet modification for treatment of diseases
 - (C) Nutrition for weight gain
 - (D) Diet for healthy individuals only
54. Complementary proteins are obtained by the combination of :
- (A) Cereals and pulses
 - (B) Fruits and vegetables
 - (C) Milk and fruits
 - (D) Meat and eggs
55. The best indicator of nutritional status in adults is :
- (A) Hemoglobin level
 - (B) Body Mass Index
 - (C) Blood pressure
 - (D) Heart rate
56. Typhoid fever is primarily transmitted through :
- (A) Airborne droplets
 - (B) Contaminated food and water
 - (C) Insect bites
 - (D) Skin contact
57. The DASH diet, often recommended for hypertension, emphasizes on :
- (A) Fruits, vegetables, and low-fat dairy products
 - (B) High sodium intake
 - (C) High fat intake
 - (D) High sugar intake
58. Cirrhosis results from :
- (A) Viral infections and chronic alcohol intake
 - (B) Excess protein intake
 - (C) Vitamin C deficiency
 - (D) Excess carbohydrate intake

59. Which government program in India aims to control iodine deficiency disorders ?
- (A) National Goiter Control Programme (NGCP)
 - (B) Pulse Polio Programme
 - (C) Mid-Day Meal Scheme
 - (D) National Tuberculosis Programme
60. Vitamin B₁₂ is important for :
- (A) Vision
 - (B) Red blood cell formation and nerve function
 - (C) Calcium absorption
 - (D) Blood clotting
61. In severe infections, the nitrogen balance of the body becomes :
- (A) Positive
 - (B) Unchanged
 - (C) Neutral
 - (D) Negative
62. A fluid diet mainly consists of :
- (A) Solid foods
 - (B) Semi-solid foods
 - (C) Liquids and easily digestible fluids
 - (D) High-fiber foods
63. Which of the following polysaccharide is used for energy storage in animals ?
- (A) Cellulose
 - (B) Starch
 - (C) Glycogen
 - (D) Chitin
64. A dietician is responsible for :
- (A) Prescribing antibiotics
 - (B) Planning and supervising patient diets
 - (C) Performing surgery
 - (D) Diagnosing diseases
65. High-protein diets are recommended in which condition ?
- (A) Severe liver failure
 - (B) Trauma and burns
 - (C) Hypertension
 - (D) Diabetes
66. Which macronutrient provides the highest amount of energy per gram ?
- (A) Carbohydrates
 - (B) Proteins
 - (C) Lipids
 - (D) Vitamins

67. The infective stage of *Entamoeba histolytica* transmitted through water is :
- (A) Trophozoite
 - (B) Gametocyte
 - (C) Sporozoite
 - (D) Cyst
68. Who requires the highest amount of protein per kg body weight ?
- (A) Elderly people
 - (B) Adolescents
 - (C) Infants
 - (D) Adults
69. Typhoid fever is caused by :
- (A) *Salmonella typhi*
 - (B) *Vibrio cholerae*
 - (C) *Clostridium botulinum*
 - (D) *Staphylococcus aureus*
70. Essential fatty acids include :
- (A) Linoleic acid and linolenic acid
 - (B) Oleic acid and palmitic acid
 - (C) Stearic acid and palmitic acid
 - (D) Arachidic acid and myristic acid
71. Lipids are characterized by :
- (A) High solubility in water
 - (B) Insolubility in non-polar solvents
 - (C) Insolubility in water but solubility in organic solvents
 - (D) High nitrogen content
72. Atherosclerosis is primarily associated with increased level of :
- (A) HDL cholesterol
 - (B) LDL cholesterol
 - (C) Hemoglobin
 - (D) Albumin
73. Chronic hypertension causes :
- (A) Osteoporosis
 - (B) Stroke and heart disease
 - (C) Anemia
 - (D) Goiter
74. Chronic alcohol consumption can lead to deficiency of which vitamin due to poor absorption ?
- (A) Vitamin B₁ (Thiamine)
 - (B) Vitamin A
 - (C) Vitamin C
 - (D) Vitamin D
75. The increased nutritional demand during lactation is due to :
- (A) Hormonal imbalance
 - (B) Decreased fat storage
 - (C) Increased maternal metabolism
 - (D) Milk synthesis and nutrient transfer to the infant

76. Food exchange lists are used for :
- (A) Food preservation
 - (B) Dietary planning and calorie calculation
 - (C) Food cooking methods
 - (D) Food packaging
77. Poliomyelitis is caused by :
- (A) Bacteria
 - (B) Virus
 - (C) Protozoa
 - (D) Fungus
78. Colostrum produced by nursing mothers is rich in :
- (A) Immunoglobulins and proteins
 - (B) Lactose and casein
 - (C) Lipids only
 - (D) Carbohydrates only
79. In severe trauma or burns, the body requires :
- (A) Energy and protein
 - (B) Fat only
 - (C) Sodium only
 - (D) Vitamins only
80. Narcotic drugs affect :
- (A) Circulatory system
 - (B) Muscular system
 - (C) Skeletal system
 - (D) Nervous system
81. In allergy, the main dietary management consists of :
- (A) Increasing fat intake
 - (B) Eliminating the allergenic food
 - (C) Increasing protein intake
 - (D) Increasing sodium intake
82. Marasmus mainly results from the deficiency of :
- (A) Protein only
 - (B) Energy (calorie) intake
 - (C) Iron only
 - (D) Vitamin A
83. Which nutrient acts primarily as a cofactor for many metabolic enzymes ?
- (A) Carbohydrates
 - (B) Vitamins
 - (C) Fats
 - (D) Water
84. Chronic alcoholism can lead to liver diseases like :
- (A) Cirrhosis
 - (B) Goiter
 - (C) Rickets
 - (D) Osteomalacia

85. Marasmus is commonly seen in :
- (A) Adults
 - (B) Children under five years
 - (C) Elderly people
 - (D) Adolescents
86. Humans acquire taeniasis by consuming :
- (A) Contaminated vegetables
 - (B) Contaminated water
 - (C) Undercooked infected meat
 - (D) Raw fruits
87. Pasteurization of milk helps to destroy :
- (A) All microorganisms
 - (B) Viruses only
 - (C) Fungi only
 - (D) Pathogenic bacteria
88. Hyperglycemia in diabetes mellitus results from :
- (A) Increased glycogen synthesis
 - (B) Reduced insulin activity leading to impaired glucose uptake
 - (C) Excess vitamin intake
 - (D) Reduced carbohydrate intake
89. The primary dietary goal in hyperlipidemia is to :
- (A) Increase fat intake
 - (B) Reduce saturated fat and cholesterol
 - (C) Increase carbohydrate intake
 - (D) Increase sodium intake
90. A diet that combines cereals with pulses improves protein quality due to :
- (A) Increased caloric density
 - (B) Complementation of limiting amino acids
 - (C) Increased lipid content
 - (D) Higher fiber concentration
91. During pregnancy which mineral requirement increases significantly to support fetal development ?
- (A) Sodium
 - (B) Iron
 - (C) Chlorine
 - (D) Fluorine
92. A common symptom of marasmus in children is :
- (A) Edema
 - (B) Severe wasting of muscles
 - (C) Enlarged liver
 - (D) Swollen abdomen

93. When is Enteral feeding used ?
- (A) The digestive tract is functional but oral feeding is not possible
 - (B) The digestive tract is completely damaged
 - (C) The patient refuses food
 - (D) The patient is healthy
94. Iron deficiency commonly leads to :
- (A) Goiter
 - (B) Anemia
 - (C) Rickets
 - (D) Osteoporosis
95. During fever, the body's metabolic rate :
- (A) Decreases
 - (B) Remains constant
 - (C) Increases
 - (D) Stops
96. Iodine deficiency during pregnancy causes which of the following ?
- (A) Cretinism
 - (B) Pellagra
 - (C) Rickets
 - (D) Scurvy
97. The primary biochemical disturbance in uncontrolled diabetes mellitus is :
- (A) Hypoglycemia
 - (B) Hyperglycemia due to impaired insulin action
 - (C) Increased hemoglobin synthesis
 - (D) Increased vitamin absorption
98. School children are recommended to increase the intake of the following in their dietary pattern :
- (A) Refined sugar
 - (B) Protein and calcium
 - (C) Saturated fats
 - (D) Sodium
99. A high-calorie diet is usually recommended for patients suffering with :
- (A) Obesity
 - (B) Hypertension
 - (C) Fever and infections
 - (D) Hyperlipidemia
100. Food poisoning by bacteria is associated with :
- (A) Toxins produced by microbes
 - (B) Vitamins
 - (C) Minerals
 - (D) Oxygen

(Only for Rough Work)

4. Four alternative answers are mentioned for each question as—A, B, C & D in the booklet. The candidate has to choose the correct answer and mark the same in the OMR Answer-Sheet as per the direction :

Example :

Question :

- Q. 1 (A) ● (C) (D)
 Q. 2 (A) (B) ● (D)
 Q. 3 (A) ● (C) (D)

Illegible answers with cutting and over-writing or half filled circle will be cancelled.

5. Each question carries equal marks. Marks will be awarded according to the number of correct answers you have.
6. All answers are to be given on OMR Answer Sheet only. Answers given anywhere other than the place specified in the answer sheet will not be considered valid.
7. Before writing anything on the OMR Answer Sheet, all the instructions given in it should be read carefully.
8. After the completion of the examination candidates should leave the examination hall only after providing their OMR Answer Sheet to the invigilator. Candidate can carry their Question Booklet.
9. There will be no negative marking.
10. Rough work, if any, should be done on the blank pages provided for the purpose in the booklet.
11. To bring and use of log-book, calculator, pager and cellular phone in examination hall is prohibited.
12. In case of any difference found in English and Hindi version of the question, the English version of the question will be held authentic.

Impt. : On opening the question booklet, first check that all the pages of the question booklet are printed properly. If there is any discrepancy in the question Booklet, then after showing it to the invigilator, get another question Booklet of the same series.

4. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार सम्भावित उत्तर—A, B, C एवं D हैं। परीक्षार्थी को उन चारों विकल्पों में से सही उत्तर छाँटना है। उत्तर को OMR आन्सर-शीट में सम्बन्धित प्रश्न संख्या में निम्न प्रकार भरना है :

उदाहरण :

प्रश्न :

- प्रश्न 1 (A) ● (C) (D)
 प्रश्न 2 (A) (B) ● (D)
 प्रश्न 3 (A) ● (C) (D)

अपठनीय उत्तर या ऐसे उत्तर जिन्हें काटा या बदला गया है, या गोले में आधा भरकर दिया गया, उन्हें निरस्त कर दिया जाएगा।

5. प्रत्येक प्रश्न के अंक समान हैं। आपके जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।
6. सभी उत्तर केवल ओ. एम. आर. उत्तर-पत्रक (OMR Answer Sheet) पर ही दिये जाने हैं। उत्तर-पत्रक में निर्धारित स्थान के अलावा अन्यत्र कहीं पर दिया गया उत्तर मान्य नहीं होगा।
7. ओ. एम. आर. उत्तर-पत्रक (OMR Answer Sheet) पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ़ लिया जाये।
8. परीक्षा समाप्ति के उपरान्त परीक्षार्थी कक्ष निरीक्षक को अपनी OMR Answer Sheet उपलब्ध कराने के बाद ही परीक्षा कक्ष से प्रस्थान करें। परीक्षार्थी अपने साथ प्रश्न-पुस्तिका ले जा सकते हैं।
9. निगेटिव मार्किंग नहीं है।
10. कोई भी रफ कार्य, प्रश्न-पुस्तिका के अन्त में, रफ-कार्य के लिए दिए खाली पेज पर ही किया जाना चाहिए।
11. परीक्षा-कक्ष में लॉग-बुक, कैलकुलेटर, पेजर तथा सेल्युलर फोन ले जाना तथा उसका उपयोग करना वर्जित है।
12. प्रश्न के हिन्दी एवं अंग्रेजी रूपान्तरण में भिन्नता होने की दशा में प्रश्न का अंग्रेजी रूपान्तरण ही मान्य होगा।

महत्वपूर्ण : प्रश्नपुस्तिका खोलने पर प्रथमतः जाँच कर देख लें कि प्रश्न-पुस्तिका के सभी पृष्ठ भलीभाँति छपे हुए हैं। यदि प्रश्नपुस्तिका में कोई कमी हो, तो कक्षनिरीक्षक को दिखाकर उसी सिरीज की दूसरी प्रश्न-पुस्तिका प्राप्त कर लें।