

**JEMAS(PG)-2024**  
**Subject: M. Sc. in Applied Nutrition (MAN)**

**QB No: 4102400001**

**Duration: 90 minutes**

**No of MCQ: 100**

**Full Marks: 100**

**INSTRUCTIONS**

1. All questions are of objective type having four answer options for each.
2. **Category-1:** Carries **1** mark each and only one option is correct. In case of incorrect answer or any combination of more than one answer,  $\frac{1}{4}$  mark will be deducted.
3. Questions must be answered on OMR sheet by darkening the appropriate bubble marked A, B, C, or D.
4. Use only **Black/Blue ink ball point pen** to mark the answer by filling up of the respective bubbles completely.
5. Write Question Booklet number and your roll number carefully in the specified locations of the **OMR** sheet. Also fill appropriate bubbles.
6. Write your name (in block letter), name of the examination center and put your signature (as is appeared in Admit Card) in appropriate boxes in the **OMR sheet**.
7. The OMR sheet is liable to become invalid if there is any mistake in filling the correct bubbles for Question Booklet number/roll number or if there is any discrepancy in the name/ signature of the candidate, name of the examination center. The OMR sheet may also become invalid due to folding or putting stray marks on it or any damage to it. The consequence of such invalidation due to incorrect marking or careless handling by the candidate will be sole responsibility of candidate.
8. Candidates are not allowed to carry any written or printed material, calculator, pen, log-table, wristwatch, any communication device like mobile phones, bluetooth devices etc. inside the examination hall. Any candidate found with such prohibited items will be **reported against** and his/her candidature will be summarily cancelled.
9. Rough work must be done on the Question Booklet itself. Additional blank pages are given in the Question Booklet for rough work.
10. Hand over the OMR sheet to the invigilator before leaving the Examination Hall.
11. Candidates are allowed to take the Question Booklet after examination is over.

Signature of the Candidate: \_\_\_\_\_

(As in Admit Card)

Signature of the Invigilator: \_\_\_\_\_

ROUGH WORK ONLY

## MAN

1. Which one is sulphur containing amino acid?
  - (A) Alanine.
  - (B) Serine.
  - (C) Cysteine.
  - (D) Phenyl alanine.
2. The bonds in protein structure that are not broken on denaturation:
  - (A) Hydrogen bonds.
  - (B) Peptide bonds.
  - (C) Ionic bond.
  - (D) Disulfide bond.
3. Ribose and deoxyribose differ in structure around a single carbon, namely:
  - (A) C -1.
  - (B) C-2.
  - (C) C -3.
  - (D) C -4.
4. The number of double bonds present in arachidonic acid?
  - (A) 1.
  - (B) 2.
  - (C) 3.
  - (D) 4.
5. The backbone of nucleic acid structure is constructed by:
  - (A) Peptide bond.
  - (B) Glycosidic bonds.
  - (C) Phosphodiester bonds.
  - (D) All of them.
6. Pepsin is an example for the class of enzymes namely:
  - (A) Oxidoreductase.
  - (B) Transferase.
  - (C) Hydrolase.
  - (D) Ligase.
7. The functionally active form of Vitamin D is:
  - (A) Cholecalciferol.
  - (B) Ergocalciferol.
  - (C) Dehydrocholesterol.
  - (D) Calcitriol.
8. A drug which prevents uric acid synthesis by inhibiting the enzyme xanthine oxidase is:
  - (A) Aspirin.
  - (B) Allopurinol.
  - (C) Colchicine.
  - (D) Probenecid.

9. Milk is deficient in which vitamins?  
(A) Vitamin C.  
(B) Vitamin A.  
(C) Vitamin B2.  
(D) Vitamin K.
10. HDL is synthesized and secreted from:  
(A) Pancreas.  
(B) Liver.  
(C) Kidney.  
(D) Muscle.
11. The digestive enzymes of cellular compounds are confined to  
(A) Lysosomes.  
(B) Ribosomes.  
(C) Peroxisomes.  
(D) Polysomes.
12. The most important epimer of glucose is:  
(A) Galactose.  
(B) Fructose.  
(C) Arabinose.  
(D) Xylose.
13. The sugar found in milk is:  
(A) Galactose.  
(B) Glucose.  
(C) Fructose.  
(D) Lactose.
14. Hyaluronic acid is found in:  
(A) Joints.  
(B) Brain.  
(C) Abdomen.  
(D) Mouth.
15. An amphibolic pathway among the following is:  
(A) HMP shunt.  
(B) Glycolysis.  
(C) Citric acid cycle.  
(D) Gluconeogenesis.
16. During starvation, ketone bodies are used as a fuel by:  
(A) Erythrocytes.  
(B) Brain.  
(C) Liver.  
(D) Kidney.
17. On boiling, Benedict's solution is not reduced by:  
(A) Sucrose.  
(B) Lactose.  
(C) Maltose.  
(D) Fructose.

18. When O<sub>2</sub> supply is inadequate, pyruvate is converted to:
- (A) Phosphopyruvate.
  - (B) Acetyl CoA.
  - (C) Lactate.
  - (D) Alanine.
19. Before pyruvic acid enters the TCA cycle it must be converted to:
- (A) Acetyl CoA.
  - (B) Lactate.
  - (C) α-ketoglutarate.
  - (D) Citrate.
20. An oil which contains cyclic fatty acids and once used in the treatment of leprosy is:
- (A) Elaidic oil.
  - (B) Rapeseed oil.
  - (C) Lanoline.
  - (D) Chaulmoogric oil.
21. Unpleasant odours and taste in a fat (rancidity) can be delayed or prevented by the addition of:
- (A) Lead.
  - (B) Copper.
  - (C) Tocopherol.
  - (D) Ergosterol.
22. Bile is produced by:
- (A) Liver.
  - (B) Gall-bladder.
  - (C) Pancreas.
  - (D) Intestine.
23. Rennin is an:
- (A) Hormone.
  - (B) Metabolites.
  - (C) Enzyme.
  - (D) Blood cell.
24. Parasitic disease is caused by:
- (A) Salmonella sp.
  - (B) E.coli.
  - (C) Whipworm.
  - (D) Gas gangrene.
25. Dropsy is caused by:
- (A) Palm oil.
  - (B) Lard.
  - (C) Mycotoxin.
  - (D) Argemone oil.
26. Calcium pantothenate general use in:
- (A) Gum disease.
  - (B) Husky voice.
  - (C) Diabetes.
  - (D) Burning feet syndrome.

27. 1 calorie equals to:  
(A) 4.481 joule.  
(B) 4.841 joule.  
(C) 4.184 joule.  
(D) 4.148 joule.
28. Eruptive fevers find during:  
(A) Small pox.  
(B) Malaria.  
(C) Hepatitis.  
(D) Diarrhoea.
29. Microcytic anaemia is caused by deficiency of:  
(A) Calcium.  
(B) Niacin.  
(C) Zinc.  
(D) Pyridoxine.
30. Hypogonadism occur due to the deficiency of:  
(A) Magnesium.  
(B) Fat.  
(C) Thiamine.  
(D) Zinc.
31. Tay-sachs disease is occur due to the deficiency:  
(A) Trihexosyl.  
(B) Phytanic acid.  
(C) Hexosaminidase - A.  
(D) Galactocerebroside.
32. Mineral water is:  
(A) Purified water.  
(B) Boiled water.  
(C) Packaged water.  
(D) Spring water.
33. Buffalo hump is found due to:  
(A) Menopause.  
(B) Pregnancy.  
(C) Obesity.  
(D) Cushing's syndrome.
34. Farinograph instrument is used for measuring properties of:  
(A) Pulp.  
(B) Juice.  
(C) Dough.  
(D) Milk.
35. Banana flavor is due to:  
(A) Diacetal.  
(B) Pentyle acetate.  
(C) Ethyl butyrate.  
(D) Methyl acetate.

36. Theophylline is found in:
- (A) Coffee.
  - (B) Tea.
  - (C) Cocoa.
  - (D) Soft drinks.
37. Fatty liver caused due to deficiency of:
- (A) Inositol.
  - (B) Choline.
  - (C) Biotin.
  - (D) Niacin.
38. Monkey face develops during:
- (A) Aging.
  - (B) Anaemia.
  - (C) Marasmus.
  - (D) Obesity.
39. Lack of oxygen in blood is called:
- (A) Cyanosis.
  - (B) Hypoxemia.
  - (C) Iron deficiency disorder.
  - (D) Anemia.
40. Which of the following hormone is appetite suppressant?
- (A) Leptin.
  - (B) Ghrelin.
  - (C) Adiponectin.
  - (D) Orexin.
41. A breastfeeding woman should drink plenty of water to:
- (A) Produce more milk.
  - (B) Suppress lactation.
  - (C) Prevent dehydration.
  - (D) Dilute nutrient concentration.
42. \_\_\_\_\_ diet is given for management of diarrhoea:
- (A) DASH.
  - (B) BRAT.
  - (C) KETO.
  - (D) ATKINS.
43. Without any instrument body frame can be measured:
- (A) From shoulder.
  - (B) From abdomen.
  - (C) From wrist.
  - (D) From head.
44. The most common form of fat circulating in the body is:
- (A) Saturated.
  - (B) Unsaturated.
  - (C) Cholesterol.
  - (D) Triglycerides.

45. When an allergic reaction appears within body in response to any type of food or chemical ----- cells are responsible to battle in such type of reactions:  
(A) Monocytes.  
(B) Thrombocytes.  
(C) Eosinophills.  
(D) Basophills.
46. Slimy or ropy kraut is caused by:  
(A) Lactobacillus plantarum.  
(B) Erwinia herbicola.  
(C) Leuconostoc mesentroides  
(D) Lactobacillus brevis.
47. Vacuum Packaged Meats are spoiled by?  
(A) Bacillus thermosphacta.  
(B) Lactobacilli sp.  
(C) Staphylococcus aureus.  
(D) Both a and b.
48. Which food contain the most of the fat.....:  
(A) Graham Crackers.  
(B) Brownies.  
(C) Pudding.  
(D) Angel food Cake.
49. Mould that does not cause spoilage of eggs include species of:  
(A) Cladosporium.  
(B) Mucor.  
(C) Thamnidium.  
(D) Aspergillus.
50. Breast milk has almost no amount of ...:  
(A) Potassium.  
(B) Iron.  
(C) Fluoride.  
(D) Magnesium.
51. Plasma glucose level fall below \_\_\_\_\_ is termed as hypoglycaemia:  
(A) 70mg/dl.  
(B) 100mg/dl.  
(C) 125mg/dl.  
(D) 50mg/dl.
52. The period in life in which a person becomes physically capable of reproduction:  
(A) Adolescence.  
(B) Fertility.  
(C) Puberty.  
(D) Adulthood.

53. Body fat is measured in:
- (A) Ratio.
  - (B) Grams.
  - (C) Percentage.
  - (D) mEq.
54. Which of the following neurotransmitter facilitates sleep?
- (A) 5-HTP.
  - (B) Serotonin.
  - (C) Melatonin.
  - (D) Glutamate.
55. Which vitamin improves  $\text{Ca}^{++}$  absorption?
- (A) Vitamin A.
  - (B) Vitamin D.
  - (C) Vitamin C.
  - (D) Phytates.
56. \_\_\_\_\_ crosses the placenta and developing fetus has limited ability to metabolize it:
- (A) Vit-mineral megadose.
  - (B) Sugar substitutes.
  - (C) Caffeine.
  - (D) Protein.
57. Accumulation of ketone bodies in blood is known as:
- (A) Ketonuria.
  - (B) Ketosis.
  - (C) Ketoacidosis.
  - (D) Acetone formation.
58. High intake of \_\_\_\_\_ is advised to prevent constipation.
- (A) Fibre.
  - (B) Meat.
  - (C) Fish.
  - (D) Cereals.
59. Which protein is required for the formation of hard connective tissues, bones and teeth?
- (A) Collagen.
  - (B) Omega-3 Fatty Acid.
  - (C) Niacin.
  - (D) Pantothenic acid.
60. Goitre is disease caused by deficiency of:
- (A) Zinc.
  - (B) Iron.
  - (C) Vitamin A.
  - (D) Iodine.
61. Which vitamin is necessary for the stability of the DNA in biological cells:
- (A) Vitamin-D.
  - (B) Vitamin-C.
  - (C) Vitamin-B-12.
  - (D) Vitamin-A.

62. What eating disorder involves starvation and obsession with calorie intake?
- (A) Anorexia.
  - (B) Bulimia.
  - (C) Compulsive Eating.
  - (D) Binge Eating.
63. Which of the following is an artificial sweetener?
- (A) Graham crackers.
  - (B) Sorbets.
  - (C) Sucrose.
  - (D) Aspartame.
64. Which layer of cereal is rich source of thiamine?
- (A) Bran.
  - (B) Germ layer.
  - (C) Aleurone.
  - (D) Starchy endosperm.
65. HbA1c is a test that measures the amount of:
- (A) Glucose.
  - (B) Impaired fasting glucose.
  - (C) Impaired glucose tolerance.
  - (D) Glycated haemoglobin.
66. The purpose of WHO-SUN movement mission was to end...
- (A) Micronutrient deficiency.
  - (B) Iron deficiency.
  - (C) Malnutrition.
  - (D) Over Nutrition.
67. Which mineral enhances insulin activity?
- (A) Haemoglobin.
  - (B) Myoglobin.
  - (C) Haem iron.
  - (D) Free Iron.
68. IDDM is called
- (A) Type 1 diabetes.
  - (B) Type 2 diabetes.
  - (C) Insulin resistance.
  - (D) Gastrointestinal diabetes.
69. Adolescence is the age between 10-19 years, which is very crucial for....
- (A) Mental development.
  - (B) Physical development.
  - (C) Bone development.
  - (D) Skeletal system.

70. Head/chest ratio is measured for:
- (A) Elderly people.
  - (B) Adults.
  - (C) Children.
  - (D) Women.
71. Which of the following food group provides the body best source of energy:
- (A) Milk and cheese.
  - (B) Meat group.
  - (C) Fats, oils and sweets.
  - (D) Bread and cereals.
72. Increased of thirst termed as \_\_\_\_\_ is common symptom of Diabetes Mellitus
- (A) Polyphagia.
  - (B) Polydipsia.
  - (C) Polyuria.
  - (D) Hydrophilia.
73. Response of the immune system is manifested through
- (A) Food intolerance.
  - (B) Food allergy.
  - (C) Anaphylaxis.
  - (D) Environmental toxins.
74. Binding proteins in human milk bind ..... making the nutrients unavailable for pathogens to grow in the GI tract of infant.
- (A) Iron and vitamin B12.
  - (B) Ca and vitamin B12.
  - (C) Iron and vitamin B6.
  - (D) Iron and vitamin B1.
75. Kidneys help in regulating blood pressure by secreting \_\_\_\_\_
- (A) Renin and aldosterone.
  - (B) Sodium and renin.
  - (C) Aldosterone and sodium.
  - (D) Sodium and potassium.
76. ELISA stands for
- (A) Enzyme-life induced assessment.
  - (B) Enzyme-linked immunosorbent assay.
  - (C) Energy-linked immunity assay.
  - (D) Efficient Lymphocyte Immunity Standard Assessment.
77. Phagocytes also secrete special proteins called -----that active the metabolic and immune responses to infection.
- (A) B- cells.
  - (B) T- Cells.
  - (C) Cytokines.
  - (D) Macrophages.

78. Which of the following can provide naturally acquired passive immunity for the new born:
- (A) IgA.
  - (B) IgG.
  - (C) IgE.
  - (D) IgM.
79. Food poisoning is caused by
- (A) Clostridium tetani.
  - (B) Clostridium welchi.
  - (C) Corynebacterium diphtheriae.
  - (D) Clostridium botulinum.
80. BCG vaccine is for the prevention of
- (A) Brucellosis.
  - (B) Diphtheria.
  - (C) Botulism.
  - (D) Tuberculosis.
81. Vitamin C serves as
- (A) Co-enzyme.
  - (B) Antagonist.
  - (C) Antioxidant.
  - (D) Intrinsic.
82. In human, the major end product of protein i.e. Nitrogen metabolism is
- (A) Urea.
  - (B)  $\text{NH}_3$ .
  - (C) Glycine.
  - (D) Uric acid.
83. Our body needs vitamins and minerals because .....
- (A) They give the body energy.
  - (B) They help carry out metabolic reactions.
  - (C) They insulate the body's organs.
  - (D) They withdraw heat from the body.
84. \_\_\_\_\_ is the first step in the research process.
- (A) Collecting data.
  - (B) Formulating a research question.
  - (C) Approach to a funding agency.
  - (D) Choose research guide.
85. What is the appropriate statistical analysis for comparing means between two groups?
- (A) Chi-squared test.
  - (B) Analysis of variance (ANOVA).
  - (C) Regression analysis.
  - (D) T-test.

86. Which of the following has the highest Specific dynamic action (SDA)?  
(A) Egg.  
(B) Potato.  
(C) Corn oil.  
(D) Mango.
87. When the food is directly given in the veins, it is called \_\_\_\_\_ nutrition.  
(A) Parenteral.  
(B) Enteral.  
(C) Intravenous.  
(D) Saline.
88. An apple is a rich source of which of the following nutrients?  
(A) Sodium.  
(B) Potassium.  
(C) Phosphorus.  
(D) Magnesium.
89. Following is anti-nutrient present in leafy vegetables  
(A) Vitamin-C.  
(B) Oxalate.  
(C) Zinc.  
(D) Potassium.
90. Ascites is accumulation of water in  
(A) Body.  
(B) Brain.  
(C) Abdomen.  
(D) Feet.
91. If hairs are sparse, easily pluggable, which deficiency show:  
(A) Zinc.  
(B) Zinc and thiamine.  
(C) Vitamin B complexes.  
(D) Zinc and protein.
92. Metabolic water is the water generated in all cells of the body by  
(A) Ribosome.  
(B) Mitochondria.  
(C) Bodies.  
(D) Centrosome.
93. Which of the following is the sweetest among naturally occurring sugar?  
(A) Glucose.  
(B) Lactose.  
(C) Starch.  
(D) Fructose.
94. How much energy will you get from one gram of glucose?  
(A) 3.8 kilocalories.  
(B) 4.2 kilocalories.  
(C) 4.8 kilocalories.  
(D) 5.2 kilocalories.

95. A type of proteolytic enzyme is found in infants' gastric juice which helps in the digestion of milk proteins. The name of the enzyme is?
- (A) Peptide.
  - (B) Rennin.
  - (C) Amylases.
  - (D) Sucrose.
96. Respiratory Centre is located in?
- (A) Cerebellum.
  - (B) Medulla oblongata.
  - (C) Cerebrum.
  - (D) Lungs.
97. Which is the largest blood vessel in the human body?
- (A) Pulmonary vein.
  - (B) Capillaries.
  - (C) Aorta.
  - (D) lymph node.
98. Which of the following controls skeletal muscles?
- (A) Autonomic nerves.
  - (B) Somatic nerves.
  - (C) Sympathetic nerves.
  - (D) Peripheral nerves.
99. Which of the following nutrition component is not included in the ICDS Programme-
- (A) Supplementary nutrition.
  - (B) Vitamin-A prophylaxis.
  - (C) Iron and folic acid distribution.
  - (D) Prophylaxis against Vitamin-D deficiency.
100. Burning feet syndrome occurs due to deficiency of-
- (A) Niacin.
  - (B) Vitamin B12.
  - (C) Pantothenic acid.
  - (D) Vitamin-C.