

JEMAS(PG)-2022

QB No: 2102100001

Subject: M. Sc. in Applied Nutrition (MAN)

Duration: 90 minutes

No of MCQ: 100

Full Marks: 100

**Instructions**

1. All questions are of objective type having four answer options for each, carry 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.
2. Questions must be answered on OMR sheet by darkening the appropriate bubble marked A, B, C, or D. Question booklet series code (A, B, C, or D) must be properly marked on the OMR.
3. Use only **Black/Blue ball point pen** to mark the answer by complete filling up of the respective bubbles.
4. Write question booklet number and your roll number carefully in the specified locations of the **OMR**. Also fill appropriate bubbles.
5. Write your name (in block letter), name of the examination center and put your full signature in appropriate boxes in the OMR.
6. The OMR 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 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.
7. Candidates are not allowed to carry any written or printed material, calculator, pen, log-table, wristwatch, any communication device like mobile phones etc. inside the examination hall. Any candidate found with such items will be **reported against** and his/her candidature will be summarily cancelled.
8. Rough work must be done on the question paper itself. Additional blank pages are given in the question paper for rough work.
9. Hand over the OMR to the invigilator before leaving the Examination Hall.



1. Which substance is responsible for the colour of turmeric?  
(A) Curcumin.  
(B) Vanillin.  
(C) Both A & B.  
(D) None of these.
2. Which of following is used as catalyst in hydrogenation reaction?  
(A) Ni.  
(B) Pd.  
(C) Pt.  
(D) All of these.
3. Which of following causes dry skin when taken in excess amount?  
(A) Vitamin A.  
(B) Vitamin B.  
(C) Vitamin C.  
(D) Vitamin D.
4. Skeletal muscle is:  
(A) Non striated and voluntary.  
(B) Striated and involuntary.  
(C) Non striated and involuntary.  
(D) Striated and voluntary.
5. Which the following processes is not restricted to the mitochondria in eukaryotic cells?  
(A) The citric acid cycle.  
(B) Substrate-level phosphorylation.  
(C) Electron transport.  
(D) Oxidative phosphorylation.
6. The hormone that stimulates the secretion of Gastric Juice:  
(A) Renin.  
(B) Gastrin.  
(C) Enterogastrone.  
(D) Enterokinase.
7. The following substances is/are ketogenic:  
(A) Fatty acids.  
(B) Leucine.  
(C) Lysine.  
(D) All of them.

8. This vitamin is needed to prevent a birth defect called Spina Bifida:  
(A) Vitamin D.  
(B) Vitamin A.  
(C) Folate.  
(D) Vitamin E.
9. The percentage of water in the human body is:  
(A) 65.  
(B) 70.  
(C) 40.  
(D) 80.
10. Fluid movement across the capillary wall is mediated mainly by:  
(A) Diffusion.  
(B) Filtration.  
(C) Endocytosis.  
(D) Exocytosis.
11. Minimum protein required to maintain nitrogen balance for lactating mother:  
(A) 1.2gm/KgBw.  
(B) 1gm/KgBw.  
(C) 1.5gm/KgBw.  
(D) 1.6gm.
12. One of the following is not aldose:  
(A) Glucose.  
(B) Galactose.  
(C) Mannose.  
(D) Fructose.
13. Heavy worker is:  
(A) Teacher.  
(B) Fisherman.  
(C) Stone cutter.  
(D) Carpenter.
14. Liver is rich in:  
(A) Vitamin A.  
(B) Vitamin C.  
(C) Iron.  
(D) Iodine.

15. What are the ratio of PUFA & SFA present in breast milk?
  - (A) 1.2 : 1.
  - (B) 2 : 1.
  - (C) 1.5: 2.5.
  - (D) 2.5 – 1.2.
  
16. Pearl millet is called as:
  - (A) Finger millet.
  - (B) Jowar.
  - (C) Bajra.
  - (D) Maize.
  
17. The ducts of liver and pancreas unite into a common duct and open into:
  - (A) Ileum.
  - (B) Caecum.
  - (C) Colon.
  - (D) Duodenum.
  
18. Which of the following does NOT stimulate insulin secretion?
  - (A) Acetoacetate.
  - (B) Glucagon.
  - (C) Hypokalaemia.
  - (D) Acetylcholine.
  
19. Which spice is used for toothache?
  - (A) Asafoetida.
  - (B) Cloves.
  - (C) Mustard seed.
  - (D) Turmeric.
  
20. The functionally active form of vitamin D is:
  - (A) Cholecalciferol.
  - (B) Ergocalciferol.
  - (C) Dehydrocholesterol.
  - (D) Calcitriol.
  
21. Which of the following groups would be most at risk for potassium deficiency?
  - (A) Lactating mothers.
  - (B) Pregnant women.
  - (C) Anorexics.
  - (D) Infants and young children.

22. Which type of amino acid is totally absent in breast milk?
- (A) Glycine.
  - (B) Methionine.
  - (C) Tryptophan.
  - (D) Cysteine.
23. Absence of phenylalanine hydroxylase causes:
- (A) Neonatal tyrosinemia.
  - (B) Phenylketonuria.
  - (C) Primary hyperoxaluria.
  - (D) Albinism.
24. Which one of the following is responsible for expending 50% of total energy in infants?
- (A) Activity.
  - (B) Growth.
  - (C) Cognitive development.
  - (D) Basal metabolism.
25. Fatigue in muscle does not occur because of:
- (A) Long refractory period.
  - (B) Short refractory period.
  - (C) Long absolute period.
  - (D) Short absolute period.
26. Dietary fats are transported as:
- (A) Chylomicrons.
  - (B) Liposomes.
  - (C) Lipid globules.
  - (D) Oil droplets.
27. Folic acid antagonists used in the treatment of cancer:
- (A) Methotrexate.
  - (B) Trimethoprim.
  - (C) Sulphonamide.
  - (D) All of them.
28. The end product(s) of anaerobic catabolism of glucose in muscle tissue is(are):
- (A) Carbon dioxide and water.
  - (B) Lactate.
  - (C) Sucrose.
  - (D) Ethanol.

29. Which of the following is an amphipathic lipid?  
(A) Phospholipids.  
(B) Fatty acid.  
(C) Bile salts.  
(D) All of the above.
30. The temperature applied in slow freezing process to preserve fruits and vegetables:  
(A)  $-15^{\circ}\text{C}$  to  $-21^{\circ}\text{C}$ .  
(B)  $-20^{\circ}\text{C}$  to  $-25^{\circ}\text{C}$ .  
(C)  $-5^{\circ}\text{C}$  to  $-10^{\circ}\text{C}$ .  
(D)  $-18^{\circ}\text{C}$  to  $-25^{\circ}\text{C}$ .
31. Low density lipoproteins (LDL) are the principal transport vehicle for \_\_\_\_\_ in the blood.  
(A) Cholesterol.  
(B) Phospholipids.  
(C) Triglycerides.  
(D) Free fatty acids.
32. The simplest hydrophilic moiety present in the membrane lipid is:  
(A) Phosphate group.  
(B) Hydroxyl group.  
(C) Amino group.  
(D) Glucose.
33. Browning of potatoes are due to the presence of:  
(A) Anthoxanthins.  
(B) Flavones.  
(C) Tannins.  
(D) None of these.
34. Hormone responsible for the secretion of milk after parturition:  
(A) ICSH.  
(B) Prolactin.  
(C) ACTH.  
(D) LH.
35. Which of the following polysaccharide is composed of  $\beta$ -glycosidic bonds?  
(A) Starch.  
(B) Glycogen.  
(C) Dextrin.  
(D) Cellulose.

36. Which of the following minerals is lacking in milk?
- (A) Calcium.
  - (B) Sodium.
  - (C) Iron.
  - (D) Potassium.
37. The enzyme superoxide dismutase:
- (A) To overcome the effects of taking large doses of antacids, which alters blood pH.
  - (B) To protect whole grain cereals from rancidity.
  - (C) As an important scavenger of free radicals, thus protecting the lipid components of the cell.
  - (D) To increase serum cholesterol levels.
38. The type of immunoglobulin present in the colostrum secreted from mammary gland:
- (A) IgD.
  - (B) IgA.
  - (C) IgM.
  - (D) IgE.
39. The composition of dextrose which is prepared from starch is:
- (A) Glucose + Maltose + Higher saccharide.
  - (B) Fructose + Glucose + Higher saccharide.
  - (C) Maltose + Maltose + fructose.
  - (D) Maltose + Fructose + sucrose.
40. The lipid which accumulates in fatty liver is:
- (A) Free fatty acids.
  - (B) Triglycerides.
  - (C) Cholesterol.
  - (D) Lipoprotein.
41. The number of double bond present in arachidonic acid:
- (A) 1.
  - (B) 2.
  - (C) 3.
  - (D) 4.
42. Glycosidic bond in sucrose is:
- (A)  $\alpha$  1-4.
  - (B)  $\beta$  1-4.
  - (C)  $\alpha$  1-2.
  - (D)  $\beta$  1-2.



43. Physiological changes associated with scurvy (hemorrhages, joint pain fractures) are caused by:
  - (A) Faulty collagen synthesis.
  - (B) Inadequate production of the hormone, thyroxine.
  - (C) Failure to synthesize neurotransmitters.
  - (D) Failure to absorb sufficient amounts of dietary iron.
  
44. Which of the following definitions describes anorexia nervosa?
  - (A) Irrational fear of obesity & weight gain.
  - (B) Extreme weight loss.
  - (C) Distorted body image.
  - (D) A, B & C.
  
45. Choose the element that prevents the development of dental caries:
  - (A) Fluorine.
  - (B) Calcium.
  - (C) Phosphorus.
  - (D) Sodium.
  
46. Pernicious anaemia results due to deficiency of:
  - (A) Vitamin B<sub>1</sub>.
  - (B) Vitamin A.
  - (C) Vitamin B<sub>12</sub>.
  - (D) Iron.
  
47. Which of the following has more calories?
  - (A) Soy milk.
  - (B) Whole milk.
  - (C) Skim milk.
  - (D) Toned milk.
  
48. An example of sulphur containing amino acid is:
  - (A) 2-Amino-3-mercaptopropanoic acid.
  - (B) 2-Amino-3-methylbutanoic acid.
  - (C) 2-Amino-3-hydroxypropanoic acid.
  - (D) Amino acetic acid.
  
49. The pregnant woman needs:
  - (A) The same amount protein needed by lactating mother.
  - (B) Less amount of protein needed by lactating mother.
  - (C) Less amount of protein needed by non-pregnant woman.
  - (D) None of the above.

50. Which of the following groups contains all polysaccharides?
  - (A) Maltose, lactose, fructose.
  - (B) Sucrose, glucose, fructose.
  - (C) Glycogen, cellulose, starch.
  - (D) Glycogen, sucrose, maltose.
  
51. Select the incorrect statement:
  - (A) Amino acids are substituted methane.
  - (B) Glycerol is trihydroxy propane.
  - (C) Lysine is neutral amino acid.
  - (D) Lecithin is phospholipid.
  
52. What is the calorie requirement of an Indian reference pregnant women as per ICMR 2010?
  - (A) 1900 C.
  - (B) 2850 C.
  - (C) 2250 C.
  - (D) None of them.
  
53. The metabolic excreted in urine in thiamine deficiency:
  - (A) Pyruvate.
  - (B) Glucose.
  - (C) Xanthurenic acid.
  - (D) FIGLU.
  
54. Acetaldehyde dehydrogenase is following type of enzyme:
  - (A) An oxidoreductase.
  - (B) A transferase.
  - (C) A hydrolase.
  - (D) A lyase.
  
55. Osteoclastic resorption activity of bone increases during:
  - (A) Osteoporosis.
  - (B) Ricket.
  - (C) Craniotabes.
  - (D) Gout.
  
56. Which of the following is not an essential amino acid:
  - (A) Lysine.
  - (B) Isoleucine.
  - (C) Glycine.
  - (D) Tryptophan.

57. Ornithine cycle completes in:  
(A) Kidney.  
(B) Heart.  
(C) Muscles.  
(D) Liver.
58. The major proteins of blood plasma are:  
(A) Albumin, globulin and fibrinogen.  
(B) Collagen, elastin and fibrinogen.  
(C) Albumin, glutelin and p-protein.  
(D) Actin, myosin and tubulin.
59. Stachyose is one of the:  
(A) Trisachharide.  
(B) Tetrasaccharide.  
(C) Pentasaccharide.  
(D) Disaccharide.
60. Source of caproic acid is:  
(A) Butter.  
(B) Palm oil.  
(C) Beef fat.  
(D) Olive oil.
61. Which out of the following food stuffs has shortage of lysine?  
(A) Cereals.  
(B) Pulses.  
(C) Milk.  
(D) Fish.
62. Adults with a body mass index ( BMI )value of \_\_\_\_kg per square metre or more are considered obese:  
(A) 15.  
(B) 20.  
(C) 30.  
(D) 40.
63. Alkaline-ash diet is given to patient suffering from:  
(A) Renal uric acid crystal stone.  
(B) Cholelithiasis.  
(C) Cirrhosis of liver.  
(D) Fatty liver.

64. Which of the following kills bacteria that enters along the food?  
(A) Pepsin.  
(B) Mucin.  
(C) HCl.  
(D) Lipase.
65. Increased urinary indole acetic acid is diagnostic of:  
(A) Maple syrup urine disease.  
(B) Hartnup disease.  
(C) Homocystinuria.  
(D) Phenylketonuria.
66. Which of the following type of lipid is most specific as a risk to develop coronary heart disease?  
(A) HDL.  
(B) LDL.  
(C) Tryglyceride.  
(D) chylomicrons.
67. Which of the following test is undertaken to differentiate between glucose and fructose?  
(A) Molish test  
(B) Benedict test.  
(C) Iodine test.  
(D) Seliwanoff test.
68. Calorie requirement of boys 10-12 years is:  
(A) 2010.  
(B) 2190.  
(C) 2750.  
(D) 3020.
69. Bile salt act as a activator of which enzyme:  
(A) Pepsinogen.  
(B) Trypsinogen.  
(C) Lipase.  
(D) Pancreatic amylase.
70. In diabetes mellitus the patient drinks more water as there is urinary loss of:  
(A) Salt.  
(B) Insulin.  
(C) Protein.  
(D) Glucose.

71. Which of the following converts Carbohydrates in Maltose and Glucose?
- (A) Lipase.
  - (B) Amylase.
  - (C) Trypsin.
  - (D) Pepsin.
72. Types of cells in taste buds:
- (A) 2.
  - (B) 3.
  - (C) 4.
  - (D) 5.
73. Fat digestion is facilitated by:
- (A) Bile juice.
  - (B) Pancreas juice.
  - (C) Gastric juice.
  - (D) Intestinal juice.
74. One of the following enzyme in glycolysis catalyses an irreversible reaction:
- (A) Isomerase.
  - (B) Phosphofructokinase.
  - (C) Phosphoglycerate Kinase.
  - (D) Glyceraldehyde 3 phosphatedehydrogenase.
75. The absorbed fat in the form of chylomicrons appear first in the:
- (A) Portal vein.
  - (B) Lymphatic.
  - (C) Subclavian vein.
  - (D) Capillaries.
76. Most Digestion takes place in the:
- (A) Stomach.
  - (B) Large intestine.
  - (C) Small intestine.
  - (D) Pancreas.
77. Which one of the vitamin A functions as a steroid hormone?
- (A) Retinal.
  - (B) Retinol.
  - (C) Provitamin A.
  - (D) Beta carotene.

78. Which is the most common precipitant of alcoholic ketoacidosis?  
(A) Pancreatitis.  
(B) GI bleed.  
(C) Alcohol withdrawal without precipitating illness.  
(D) Infection.
79. Amylase in saliva begins with the breakdown of carbohydrate into \_\_\_\_\_.  
(A) Fatty acids.  
(B) Simple sugars.  
(C) Polypeptide.  
(D) Amino acids.
80. The first substance produced in the citric acid cycle is:  
(A) Acetyl CoA.  
(B) Oxaloacetate.  
(C) ATP.  
(D) Citrate.
81. The nitrogenous base not present in DNA structure:  
(A) Adenine.  
(B) Guanine.  
(C) Cytosine.  
(D) Uracil.
82. Uric acid is formed by the breakdown of:  
(A) Purines.  
(B) Pyrimidines.  
(C) Urea.  
(D) All of the above.
83. Trypsin inhibitors are present in:  
(A) Cheese.  
(B) Potato.  
(C) Beans.  
(D) Mango.
84. Caloric value of carbohydrate per gram is:  
(A) 9.45 kcal.  
(B) 5.65 kcal.  
(C) 4.1 kcal.  
(D) 9.0 kcal.

85. Choose the element that prevents the development of dental caries:
- (A) Fluorine.
  - (B) Calcium.
  - (C) Phosphorus.
  - (D) Sodium.
86. Which one of the following contains highest amount of protein?
- (A) Bengal gram.
  - (B) Green gram.
  - (C) Red gram.
  - (D) Black gram.
87. Insulin activates:
- (A) Lipolysis.
  - (B) Ketogenesis.
  - (C) Gluconeogenesis.
  - (D) Glycolysis.
88. Which of the following does NOT increase plasma calcium?
- (A) Parathyroid hormone.
  - (B) Vitamin D.
  - (C) Thyroxine.
  - (D) Calcitonin.
89. Largest leucocyte is:
- (A) Neutrophil.
  - (B) Lymphocyte.
  - (C) Basophil.
  - (D) Monocyte.
90. Deficiency of oxidation of fatty acids causes:
- (A) Pulmonary hypersecretion.
  - (B) Cardiomyopathy.
  - (C) Cirrhosis.
  - (D) Glomerulonephritis.
91. What is a good source of bacteria?
- (A) Yogurt.
  - (B) Icecream.
  - (C) Soamilk.
  - (D) Goat's milk.

92. In 2011 concept of “Food Pyramid” is replaced by:  
(A) My plate.  
(B) My Portion.  
(C) Food list.  
(D) Diet Portion.
93. Which of the following is a sulphur containing essential amino acid?  
(A) Methionine.  
(B) Cystine.  
(C) Cysteine.  
(D) All of them.
94. In which of the following disorder, blood has defective haemoglobin?  
(A) Hematoma.  
(B) Hematuria.  
(C) Hemophilia.  
(D) Sickle cell anaemia.
95. Which of the following volatile oil is present in ginger?  
(A) Gingerol.  
(B) Allin.  
(C) Eugenol.  
(D) Scoville.
96. Where does protein digestion begin?  
(A) Mouth.  
(B) Stomach.  
(C) Small intestine.  
(D) Large intestine.
97. 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.
98. Pancreas produces:  
(A) Digestive enzymes.  
(B) Glucagon.  
(C) Insulin.  
(D) All the above.



99. When a muscle depletes its supply of ATP, the next molecule used as an energy source is:
- (A) Pyruvate.
  - (B) Muscle glycogen.
  - (C) Blood glucose.
  - (D) GTP.
100. Glossitis is due to the deficiency of:
- (A) Niacin.
  - (B) Thiamine.
  - (C) Riboflavin.
  - (D) Vit B<sub>12</sub>.

