

Date: _____

Admission Test

PhD Human Nutrition and Dietetics

Name: _____

Reference ID: _____

Marks Obtained: _____

1. Environmental/developmental exposures during early life (particularly the in-utero period) can permanently influence health and vulnerability to disease in later life. This statement refers to:

- a) DOHaD hypothesis
- b) Fetal origins hypothesis
- c) Developmental programming
- d) All of the above

4. These rhythmic contractions of the intestines (induced by circular muscles) squeeze and mix the chyme, promoting close contact with the digestive juices and the absorbing cells of the intestinal walls, before letting the contents move slowly along:

- a) Peristalsis
- b) Segmentation
- c) Mass movements
- d) Borborygmus

5. Absorption of nutrients into the intestinal cells typically occurs through one of the four processes. In this regard, water-soluble vitamins are absorbed through:

- a) Passive diffusion
- b) Facilitated diffusion
- c) Active transport
- d) Endocytosis

7. Which of the following nutritional factors has been shown to BEST predict long-term morbidity and/or mortality?

- a) BMI >30 or <18
- b) >10% weight gain in the previous 6 months
- c) Percent body fat >22% (men) or >35% (women)
- d) Total fat intake >30% of consumed calories

11. Which of the following statements is TRUE regarding *probiotics*?

- a) Probiotics are organisms that contribute toward intestinal microbial balance
- b) Probiotics are non-digestible food products that selectively stimulate the growth of one or a limited number of bacteria in the colon to confer health benefits for the host
- c) There is good evidence to suggest that probiotics have a beneficial role in preventing postoperative recurrence of Crohn's Disease
- d) Milk is an example of a food source containing probiotics

16. Intake of adequate amounts of this vitamin is vital for bone growth, and therefore, regulating the activity of both osteoblasts and osteoclasts:

- a) Vitamin A
- b) Vitamin D
- c) Vitamin E
- d) Vitamin K

18. The focus of community nutrition revolves around 3Ps, in essence:

- a) People, progress, and prosperity
- b) People, policy, and programs
- c) Policy, programs, and public health agencies
- d) Policy, programs, and public-private partnership

19. In the context of health promotion efforts, this focuses on detecting disease early through screening and other forms of risk appraisal:

- a) Primary prevention
- b) Secondary prevention
- c) Tertiary prevention
- d) None of the above

20. Some of the salient characteristics attributed to modern nutrition-associated diseases include that they may result from excessive and/or insufficient intake of dietary factors, as well as:

- a) Multicausation
- b) Long latent periods
- c) Not readily reversible
- d) All of the above

21. People with these often experience a disproportionate amount of preventable illness and premature death:

- a) Infectious diseases
- b) Functional impairments
- c) Nutrition-associated noncommunicable diseases
- d) None of the above

23. Vitamin D deficiency is characterized by:

- a) Osteomalacia
- b) Osteopenia
- c) Osteoporosis
- d) Rickets

25. Wasting, stunting, underweight, and deficiencies in vitamins and minerals are 4 broad sub-forms of this phenomenon:

- a) Malnutrition
- b) Undernutrition
- c) Hidden hunger
- d) Obesity

30. It describes a condition in which a person regurgitates food they have previously chewed and swallowed, re-chews it, and then either re-swallows it or spits it out:

- a) Re-feeding disorder
- b) Rumination disorder
- c) Pica
- d) Binge-eating disorder

32. Loss of economic activity due to illness and premature death associated with obesity:

- a) DALYs
- b) DELYs
- c) DOLYs
- d) DILYs

33. Lack of appropriate lipid absorption leads to a condition known as:

- a) Metabolic syndrome
- b) Obesity
- c) Fatty liver
- d) Steatorrhea

34. Bile, in the context of lipid digestion, does not function as an enzyme, but rather as:

- a) Surfactant
- b) Tensioactive
- c) Emulsifier
- d) All of the above

35. A study is conducted in which physiologic organ functions are measured in persons aged 60 to 90 years and compared to a control population of persons aged 20 to 30 years. Which of the following physiologic parameters is most likely to be higher for the older population, compared to the younger population?

- a) Glomerular filtration rate
- b) Forced vital capacity
- c) Diastolic blood pressure
- d) Maximal heart rate

37. Contrary to popular belief and norms, honey should not be fed to infants (children under the age of 12 months) owing to the presence of this potentially lethal microorganism:

- a) *Lactobacillus kunkeei*
- b) *Paenibacillus alvei*
- c) *Clostridium botulinum*
- d) *Klebsiella pneumoniae*

38. These structures are responsible for secreting intestinal juices into the small intestine, which are meant for the digestion of chyme:

- a) Goblet cells
- b) Crypts
- c) Villi
- d) Microvilli

39. This hormone responds to the presence of acidic chyme in the small intestine, stimulating the pancreas to secrete bicarbonate-rich juices into the small intestine to maintain a slightly alkaline pH here:

- a) Gastrin
- b) Secretin
- c) Cholecystokinin
- d) Somatostatin

40. Total Parenteral Nutrition (TPN) is indicated in which of the following hospitalized patients?

- a) All patients post-surgery
- b) Patients with an intact GI tract
- c) Patients with renal disease
- d) Patients with bowel obstruction

41. This effect would manifest if supplies of infant formula are widely available and uncontrolled, and mothers who would otherwise breastfeed, lose their confidence, and needlessly start to give artificial feeds:

- a) Spoiler effect
- b) Spillover effect
- c) Abundance effect
- d) Glut effect

42. Short-chain and medium-chain fatty acids (SCFAs and MCFAs) have been shown to possess veritable health benefits, both on their own, as well as in synergistic combinations with organic acids, essential oils, and probiotics. Prime animal sources for these fatty acids are:

- a) Dairy products
- b) Fish oil
- c) Cod liver oil
- d) Chicken fat

44. When meals deliver more energy than the body needs, the excess is stored as fat in the adipose cells for later use. An enzyme hydrolyzes triglycerides from circulating lipoproteins, releasing fatty acids, diglycerides, and monoglycerides into the adipose cells. The facilitator enzyme is:

- a) Lipoprotein lipase (LPL)
- b) Hormone-sensitive lipase (HSL)
- c) Bile salt-dependent lipase (BSDL)
- d) Lysosomal lipase (LSL)

48. A 4-year-old child was born at term, with no congenital anomalies. She is now only 70% of her normal body weight. On examination, she shows dependent edema of the lower extremities as well as an enlarged abdomen with a palpable fluid wave. Her desquamating skin shows irregular areas of depigmentation and hyperpigmentation. Which of the following nutritional problems is most likely present in this child?

- a) Marasmus
- b) Kwashiorkor
- c) Marasmic-Kwashiorkor
- d) Vitamin A toxicity

52. The surgery service of a hospital routinely supplements the post-operative diet with a micronutrient to aid in wound healing. What is this micronutrient most likely to be?

- a) Copper
- b) Zinc
- c) Selenium
- d) Flouride

54. In a study of diet and metabolism, a substance is identified that binds to receptors in the hypothalamus to inhibit food intake. This substance is elaborated by adipocytes that have taken up fatty acids. What is this substance most likely to be?

- a) Adiponectin
- b) Leptin
- c) Ghrelin

56. Localized area of ischemic necrosis is mostly associated with:

- a) Ascites
- b) Petechiae
- c) Infarction
- d) Hematoma

57. Which of the following are thought to mediate, many of the systemic effects of inflammation are chemotactic and stimulate adhesion molecules:

- a) Interleukin 1 (IL-1) and tumor necrosis factor
- b) Leukotriene C4, D4 and E4
- c) Leukotriene B4

- d) Both b and c
58. Two tests commonly employed for the detection of the presence of HIV infections are:
- a) Agglutination and neutralization reactions
 - b) ELISA and Western Blotting
 - c) Haemagglutination and Coombs Test
 - d) Indirect haemagglutination and Western Blotting
59. These represent the hallmark of acute inflammation.
- a) Neutrophils
 - b) Macrophages
 - c) Low platelet count
 - d) High hematocrit
61. Observational epidemiology studies have produced useful in identifying the health effects of many food contaminants, but not for assessing risk, because:
- a) It is never possible to know whether observed effects are caused by the contaminant
 - b) Human exposure through food is usually much less than exposures that have been studied
 - c) Controlled animal studies provide more reliable information
 - d) Reliable dose-response data are difficult to acquire and often unavailable
62. Food allergies:
- a) Are avoidable if the allergic agents are not allowed to exceed specified limits
 - b) Are a form of food intolerance
 - c) Usually occur only after an individual has been sensitized by prior exposure
 - d) Are uncomfortable but generally of little medical concern
65. Molecules of natural polyunsaturated fatty acids in vegetable oils contain:
- a) 18 carbon atoms with one carbon-carbon double bond in the cis configuration
 - b) 20 carbon atoms with at least two carbon-carbon double bonds in the cis configuration
 - c) 18 carbon atoms with at least two carbon-carbon double bonds in the trans configuration
 - d) 18 carbon atoms with at least two carbon-carbon double bonds in the cis configuration
66. Researchers use nitrogen balance studies to estimate protein requirements. Protein contains this percentage of nitrogen. so scientists can estimate the amount of protein in a sample of food, body tissue, or other material by multiplying the weight of the nitrogen in it by this value:
- a) 64%, 6.25
 - b) 48%, 4.25
 - c) 32%, 4.25
 - d) 16%, 6.25
67. If a particular nonessential amino acid is not readily available, cells can make it from a keto acid (if a nitrogen source is available) by transferring an amino group from one amino acid to its corresponding keto acid. These reactions are called:
- a) Deamination reactions

- b) Amination reactions
 - c) Transamination reactions
 - d) Men
68. Which one of the following statements about nitrogen balance is correct?
- a) In nitrogen equilibrium, the excretion of nitrogenous metabolites is greater than the dietary intake of nitrogenous compounds
 - b) Positive nitrogen balance means that there is a net loss of protein from the body
 - c) In a positive nitrogen balance, the excretion of nitrogenous metabolites is less than the dietary intake of nitrogenous compounds
 - d) In a negative nitrogen balance, the excretion of nitrogenous metabolites is less than the dietary intake of nitrogenous compounds
69. Alcohol is a major risk factor for cancer development. Which alcohol metabolite plays a prominent role in cancer development?
- a) Fatty acid ethyl esters (FAEE)
 - b) Acetate
 - c) Acetaldehyde
 - d) Acetone
70. Consumption of alcohol induces/promotes fluid losses from the human body, consequently manifesting in dehydration. In doing so, alcohol depresses the activity of the following hormone:
- a) Renin
 - b) Antidiuretic hormone (ADH)
 - c) Angiotensin
 - d) Aldosterone
71. This endogenous substrate source provides the most energy during moderate to high-intensity exercise regimens:
- a) Liver glycogen
 - b) Muscle glycogen
 - c) Intramuscular lipid
 - d) Adipose tissue lipid
74. When iron concentrations become abnormally high, the liver converts some ferritin into another storage protein, that releases iron more slowly than ferritin does, thereby protecting the body against the damage that free iron can cause. This protein is:
- a) Transferrin
 - b) Ferroportin
 - c) Hemosiderin
 - d) Hemojuvelin
75. Confounding is a particular challenge in nutritional epidemiology because:
- a) People change their diets over time
 - b) It is difficult to measure people's diets accurately in large studies

- c) There are no good methods to adjust for confounding in nutritional studies
- d) Different dietary components are correlated with each other, making it difficult to separate their effects

76. What _____ you _____ at the weekend?

- a. Does / does
- b. Do / does
- c. Does / do
- d. Do / do

77. Would you like _____ chips?

- a. Some
- b. Any
- c. A
- d. The

78. After trying for some time, he gave _____ working on it.

- a. Way
- b. Up
- c. In
- d. On

79. What _____ doing?

- a. Are they
- b. Do they
- c. Does they
- d. Is they

80. I don't know who _____ chocolate.

- a. Is liking
- b. Like
- c. Are liking
- d. Likes

81. Choose synonym of “**investigation**”.

- a. Option
 - b. Question
 - c. Expression
 - d. Search
82. Choose synonym of **“explain”**.
- a. Mix
 - b. Define
 - c. Protest
 - d. Drain
83. Choose synonym of **“private”**.
- a. General
 - b. Personal
 - c. Community
 - d. Public
84. Choose synonym of **“crazy”**.
- a. Cruel
 - b. Chubby
 - c. Wild
 - d. Mad
85. Choose antonym of **“leave”**.
- a. Arrive
 - b. Desert
 - c. Separate
 - d. Abandon
86. Choose antonym of **“high”**.
- a. Low
 - b. Tall
 - c. Important
 - d. Powerful
87. Choose antonym of **“brave”**.

- a. Heroic
 - b. Bold
 - c. Keen
 - d. Cowardly
88. Choose antonym of “**behind**”.
- a. Near
 - b. Far
 - c. In front of
 - d. On
89. If A completes a particular work in 8 days and B completes the same work in 24 days.
How many days will it take if they work together?
- a. 4
 - b. 5
 - c. 6
 - d. 7
90. What comes next in the sequence: 1, 3, 11, 43, ____?
- a. 161
 - b. 171
 - c. 181
 - d. 191
91. What is the distance travelled by a car which travelled at a speed of 80 km/hr for 3 hours and 30 minutes?
- a. 275 KM
 - b. 280 KM
 - c. 285 KM
 - d. 290 KM
92. In a class of 40 students 20% are girls. How many boys are there in the class?
- a. 26
 - b. 28
 - c. 30

- d. 32
93. $2 + 2 - 2 \times 2 \div 2 = ?$
- a. 0
 - b. 1
 - c. 2
 - d. 4
94. What comes next in the sequence: 2, 4, 10, 28, ____?
- a. 64
 - b. 70
 - c. 76
 - d. 82
95. $0.003 \times 0.0004 = ?$
- a. 0.0012
 - b. 0.00012
 - c. 0.000012
 - d. 0.0000012
96. If A completes a particular work in 4 days and B completes the same work in 12 days.
How many days will it take if they work together?
- a. 1
 - b. 2
 - c. 3
 - d. 4
97. If the sum of two numbers is 16, and their product is 63. Then the larger number is:
- a. 9
 - b. 10
 - c. 11
 - d. 12
98. What is the number, if 40% of the number is 380?
- a. 930
 - b. 935

- c. 940
 - d. 950
99. Through which action children learn fast?
- a. Facial expression
 - b. Walk
 - c. Watch
 - d. Writing
100. Teacher should read other books also except course-books. What will be the benefit of it?
- e. They can use their best time
 - f. They will get satisfaction and teach well
 - g. Knowledge will be overall developed and they teach well
 - h. People will know him as best teacher due to his way of teaching