

**IDA REGISTERED DIETITIAN EXAMINATION**

**October 2010**

**PAPER I (Physiology, Microbiology, Biochemistry)**

Time: 2 hours

Marks: 100

**SECTION - A**

**Give the Correct Answer (10 x 2 = 20 marks)**

1. The TRUE statement about iron in human body is that it is
  - a. readily excreted in urine
  - b. **p**resent in both ferrous and ferric state
  - c. transported as ceruloplasmin
  - d. absorbed in stomach
  
2. Glutathione is a
  - a. octapeptide
  - b. tetrapeptide
  - c. tripeptide
  - d. dipeptide
  
3. Starvation causes a decrease in which of the following metabolic process?
  - a. Lipogenesis
  - b. Glycogenolysis
  - c. Lipolysis
  - d. Glucogeneogenesis
  
4. Fatty acid **NOT** synthesized in man is
  - a. Oleic
  - b. palmitic
  - c. linoleic
  - d. stearic
  
5. ALL or NONE transmission occurs in
  - a. Rods and cones
  - b. axon
  - c. pacinian corpuscle
  - d. merkel's disc
  
6. Erythropoietic secretion is facilitated by the following factors **EXCEPT**
  - a. Alkalosis
  - b. catecholamine
  - c. prostaglandins
  - d. estrogens

7. Acidity of gastric juice depends on
- a. Rate of parietal cell secretion
  - b. Post prandial alkaline tide
  - c. rate of peptic secretion
  - d. mucosal bicarbonate barrier
8. During active secretion the pH of saliva is about
- a. 5
  - b. 6
  - c. 7
  - d. 8
9. Frozen chickens are an important source of
- a. Micrococcus
  - b. Lactobacillus
  - c. salmonella
  - d. pseudomonas
10. Giardia lamblia is otherwise known as
- a. Lamblia intestinals
  - b. Taenia spiralis
  - c. Trichinella spiralis
  - d. Taenia nativa

## Section B

1. **State whether the following statements are TRUE OR FALSE**  
**( 5 x 1 = 5 marks)**
- a. The hormone associated with regulation of water balance is anti diuretic hormone
  - b. HMG CoA synthase is the rate limiting enzyme in the gluconeogenesis pathway
  - c. VLDL carries endogenous triglycerides
  - d. Aspergillus nomius is NOT an aflatoxin
  - e. On an average, an adult secretes 2.5 litres of saliva per day
2. **Fill in the blanks ( 5 x 1 = 5 marks)**

- a. The pH at which a molecule carries no net charge is called \_\_\_\_\_
- b. Sensation of hunger, thirst and feeding is associated with \_\_\_\_\_
- c. The purely ketogenic amino acid is \_\_\_\_\_
- d. Two types of synapses are \_\_\_\_\_ and \_\_\_\_\_
- e. The causative factor for Q fever is \_\_\_\_\_

**3. Name one organism involved in each of the following ( 5 x 1 = 5 marks)**

- a. Polio
- b. Malo-lactic fermentation
- c. Acute watery diarrhea
- d. Emetic syndrome
- e. Yersiniosis

**4. Differentiate between (3 x 3 =9 marks)**

- a. Leukocytosis and leukemia
- b. enzymes and co enzymes
- c. Gram negative and gram positive bacteria

**5. Match the following (6 x 1 = 6 marks)**

- |   |                       |
|---|-----------------------|
| a. Lactate dehydrogenase                  | excessive salivation  |
| b. inhibitor of oxidative phosphorylation | Klebsiella aerogenes  |
| c. COPD                                   | Aeromonas             |
| d. Sialorrhoea                            | watery diarrhea       |
| e. Facultative anaerobe                   | myocardial infarction |
| f. Traveller's diarrhea                   | cyanide               |
|   | respiratory acidosis  |
|   | metabolic acidosis    |

**6. Explain the terms ( 5 x 2 = 10)**

- a. deglutition apnea                      b. anion gap                      c. bohr effect  
d. histones                      e. Ergotism                      f. renal rickets

**7. Complete the following reactions (10 marks)**

- a. Fructose 1,6 bisphosphate → Phosphoenol pyruvate  
b. HMG CoA → Squaelene  
c. Tryptophan → Serotonin

**Section C ( 2 x 15 = 30 marks)**

**Answer ANY TWO questions**

1. What is uremia. Describe the reaction of urea cycle. Discuss the interrelation of urea cycle and the citric acid cycle
2. Define food born illness. What are the possible causes of food born illness. Explain Alimentary tract as the site of food born illness
3. Define digestion? What are peristaltic movements and their role in human digestion? What is the special route that lipids follow during digestion? What are chylomicrons?

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**PAPER II (Nutrition, Dietetics, Food Service Management)**

Time: 2 hours

Marks: 100

Answer all questions : -(10X2 = 20 marks)

- a) Explain dawn phenomenon
- b) Explain use of the following in the diagnosis of disease –
  - i) Glycosylated Heamoglobin
  - ii) Serum Uric Acid
  - iii) SGOT
  - iv) Alkaline Phosphatase

- c) What is Steven Johnson Syndrome and its nutritional implications
- d) What does an increased pre-albumin value indicate ?
- e) Explain an organization chart with an example
- f) Explain waterlow's classification of weight for height and weight for age
- g) Expand – DHA, BIS, SMBG, HACCP
- h) List four sites at which skin fold thickness is measured for assessment of nutritional status.
- i) Expand SOAP in terms of nutritional care
- j) What are the three types of food production systems?

2. Answer all questions : (20 x 1 = 20 marks)

- i) When parenteral nutrition is indicated in ICU patients, the amino acid solution should contain –
  - a) 0.6 gms/Kg/day of L-glutamine
  - b) 0.1 gms/Kg/day of L-glutamine
  - c) 0.2 - 0.4 gms/Kg/day of L-glutamine
  
- ii) When forecasting the number of meals, which of the following data do you use most often?
  - a) Profit and loss statement
  - b) Food cost percent
  - c) Previous records on sales
  - d) Inventory on hand
  
- iii) Peyer's patches are commonly seen in:
  - a) Tuberculosis
  - b) Malaria
  - c) Typhoid
  - d) Polio
  
- iv) Rothera's test is used to check \_\_\_\_\_ in urine:
  - a) Glucose
  - b) Ketones
  - c) Amino acids
  - d) Albumin

- v) Give any two essential components of an effective communication in nutritional counseling.
- vi) Milk is deficient in \_\_\_\_\_ and \_\_\_\_\_
- vii) Egg should not be over boiled
  - a) to increase availability of iron.
  - b) to prevent the greenish black ring of iron sulphide being formed
  - c) both of the above
  - d) none of the above

k) Normal serum levels of creatinine and urea in adults

- viii) In the absence of indirect calorimetry, ICU patients should receive \_\_\_\_\_ Kcal/KG/day
  - a) 40
  - b) 30
  - c) 25

- ix) List any two commonly employed methods for assessment of body composition.
- x) Additional proteins recommended for a pregnant woman as per the latest RDA of ICMR (released in 2009)
- xi) Any two commonly used foods rich in glutamine
- xii) Glucose load used in OGTT

- xiii) With regard to personnel management, every manager of a business establishment must know:
  - 1. Law
  - 2. Food Rates
  - 3. Formulation of Acts
  - 4. Legal implications of hiring staff

- xiv) Standardization of recipes aid in:
  - a) Acceptability and quality
  - b) Size and number of portions
  - c) Appearance and flavour
  - d) Methods of cooking

- xv) The osmolality (mOsm/kg) of icecream is greater than soups/broths - True or false

- xvi) The term low fat on food label as per codex alimentarius (WHO) guidelines means :

- a. Less than 3 grams/100g (solids) , 1.5 g /100 ml (liquids)
- b. Less than 3 grams of fat per serving

- c. Less than 1 grams/100g (solids) , 0.5 g /100 ml (liquids)
- d. Less than 10 grams of fat per serving
- xvii) The body absorbs the lycopene in canned, pasteurized tomato juice and tomato products that contain oil more easily than the lycopene found in a fresh, raw tomato – True or False

xviii) HELLP Syndrome, is a pregnancy complication with following indications :

- a. Hemolytic anemia, elevated liver enzymes, low platelet count
- b. elevated blood pressure
- c. proteinuria with haemolysis

- xix) A 51 yr old male diagnosed recently with diabetes, with the following parameters - LDL 155 mg/dl, HDL - 40 mg/dl, total cholesterol 234 mg/dl, and triglycerides 265 mg/dl. He is following a diabetic diet plan, In addition to increasing his statin dosage, which additional dietary change would you recommend be included in his treatment plan in order to maximally lower his cholesterol?
- a. Add a fish oil supplement
  - b. Restrict dietary cholesterol to <200 mg/day.
  - c. Restrict dietary fat to <35% of total calories.
  - d. Restrict dietary saturated fat to <10% of total calories.

- xx) Approximately how much weight does the average newly diagnosed patient with type 2 diabetes need to lose if he expects his blood glucose levels to normalize completely?
- a. 2.5 kg or approximately 3.5% of ideal body weight (IBW)
  - b. 4.5 kg or approximately 7% of IBW
  - c. 10 kg or approximately 16% of IBW
  - d. 8.0 kg or approximately 12.5% of IBW

Answer all questions : ( 5 x 3 = 15 marks)

1. Explain MUST in brief
2. Differentiate between rheumatoid arthritis and osteoarthritis
3. Explain the phases in icteric disease (jaundice)
4. Parameters used to assess prevalence of anemia in a community
5. Briefly explain safe enteral feeding practices

Answer all questions : (3 X 5 = 15 marks)

Outline dietary guidelines for :

1. Nutritional support in patients with ESLD with or without encephalopathy
2. Patient with multiple organ dysfunction syndrome (MODS)
3. Dietary management of ulcerative colitis

Answer any two questions: (2 x 15 = 30 marks)

1. Mr. Hari is 55 year old male with chronic renal failure who was admitted with puffiness of face and pedal edema since 20 days. His biochemical parameters are as follows:
  - a) Hb - 10.5g/dl
  - b) RBS - 241mg/dl
  - c) Na - 138mEq/l
  - d) K - 6.1mEq/l
  - e) Urea - 59 mg/dl
  - f) Albumin - 2.8g/dl
  - g) Urine analysis - AlbuminuriaPlan a diet.
2. A 29 year old male with a history of an RTA and consequent SAH, is on ventilator support. His hemoglobin is 12.6g/dl, albumin is 3.0g/dl and his prealbumin is 15g/dl. His TLC is 21,400.

Explain with reasons for need to start enteral or parenteral nutrition & give the feeding plan.
3. Mrs Preeti Agarwal is 46-year-old with progressive dyspnea on exertion. She had a relatively normal childhood growth and development. She was noted to have a murmur 26 years ago. No therapy was sought and the patient had been well until recently. She had a successful pregnancy and delivery in the past without hemodynamic compromise. She has a past history of **Hypertension**, Chronic back pain and **hysterectomy 2 yrs back**.
  - Wt: 105 kgs
  - BP: 140/70 HR: 74 .
  - Heart: normal S1, S2
  - Hb: 13.2 mg/dl, Hct: 35%, Platelets: 268
  - Na: 143, K: 4.1, Cl: 105, CO2: 26, BUN: 12, Cr: 0.73, RBS: 106

Plan a diet indicating the lifestyle modifications to be taken.