

## IDA REGISTERED DIETITIAN EXAMINATION

November 2005

### **Paper I (Physiology, Microbiology, Biochemistry)**

Time : 2 Hrs

Answer All Questions

Marks : 100

Give the correct answer

#### **Section – A (10 x 2 = 20 Marks)**

1. This is called the reserve pacemaker
  - a) Atrio ventricular node
  - b) Sinu-atriel node
  - c) Bundle of HIS
  - d) Purkinje tissue
2. If a subject holds the breath at the end of a quiet expiration he can maintain a voluntary apnoea for
  - a) 45 – 55 seconds
  - b) 20 – 30 seconds
  - c) 1 – 2 mins
  - d) 5 – 10 mins
3. An error of vision in which the light rays are not brought to a point of focus on the retina is known as
  - a) Hyper metropia
  - b) Astigmatism
  - c) Chromatic aberration
  - d) Myopia
4. The example of the simplest oligomeric proteins which has four polypeptide chain is
  - a) Myoglobin
  - b) Haemoglobin
  - c) Thyroxine
  - d) Ribonuclease
5. Co-enzyme very tightly bound to the enzyme molecule is called
  - a) Catalase
  - b) Apoenzyme
  - c) Prosthetic group
  - d) Holoenzyme
6. Acetyl – CoA acetyl transferase in the fatty acid oxidation cycle is commonly known as
  - a) Acetyl transferase
  - b) Thiolase
  - c) Mono xygenase
  - d) Fatty acid Peroxide
7. Coeliac disease is called as
  - a) Gluten malabsorption
  - b) Glucose malabsorption
  - c) Lactose sensitive enteropathy
  - d) Gluten sensitive enteropathy

8. Haemodialysis or peritoneal dialysis may be considered when blood urea level is over

- a) 100 mg / 100 ml
- b) 200 mg / 100 ml
- c) 320 mg / 100 ml
- d) 80 mg / 100 ml

9. For Miso production a culture of this organism is added to steamed polished rice

- a) *Aspegillus tamarrii*
- b) *Bacillus subtilus*
- c) *Aspergillus oryzae*
- d) *Saccharomyces rouxii*

10. Photo bacterium phosphoreum has been known to cause phosphorescence of

- a) Meat and fish
- b) Meat and milk
- c) Egg and milk
- d) Fish and milk

### SECTION B (50 MARKS)

1. Fill in the blanks (10 x 1 = 10 marks)

- a) The abnormal accumulation of fluid in the peritoneal cavity is known as \_\_\_\_\_.
- b) \_\_\_\_\_ is the only organ which produces ketone bodies on any significant scale.
- c) After implantation, \_\_\_\_\_ from the placenta, helps the corpus luteum to continue secreting oestrogen and progesterone.
- d) Glutamine is formed from glutamic acid by the action of \_\_\_\_\_.
- e) The process in which genetic information may sometimes be transferred from RNA to DNA is known as \_\_\_\_\_.
- f) The plasma membrane of the skeletal muscle is known as \_\_\_\_\_.
- g) The proportion of saturated to monounsaturated to polyunsaturated fat in the diet should be \_\_\_\_\_.
- h) \_\_\_\_\_ is a type of lipo protein which transports newly digested fat through lymph and blood.
- i) The unfrozen concentrated solutions of sugars, salts etc may ooze from packages of fruits or concentrates during storage as a viscous material called the \_\_\_\_\_.
- j) \_\_\_\_\_ has been reported to eliminated most mould growth on lettuce, beets and spinach.

(10 x 1 = 10 marks)

2. State whether the following statements are "True" or "False".

- a) Acetyl choline is synthesized by the action of a specific enzyme called choline acetyl transferase.
- b) The distal reabsorption of sodium is stimulated by aldosterone which thus helps to preserve the Na<sup>+</sup> of the extracellular fluid.
- c) An average adult human body contains 880 – 990g of calcium
- d) Two sugars differing only in the configuration around one specific carbon atom are called epimas.
- e) Autooxidation of highly unsaturated fatty acids by molecular oxygen is enhanced by tocopherols.
- f) Stress, smoking and some medications can decrease the vitamin C requirement.
- g) A high calorie, high protein, high carbohydrate, moderate or restricted fat and high vitamin diet helps in regeneration of the liver.
- h) During the malfunctioning of kidneys, the potassium level in the body decreases.

- i) The centrifugal procedure used for removing bacteria from milk is known as bactofugation.
- j) Atmospheric ozone concentrations of 2 to 3 ppm doubles the storage time of loosely packed small, fresh fruits.

(5 x 2 = 10 marks)

3. Explain the following terms.

- a) Glucogenic amino acids
- b) Redox reactions
- c) Phenylketonuria
- d) Intermediate-moisture products
- e) Malting

(2 x 2 = 4 marks)

4. Differentiate between

- a) Mechanical drying and Freeze drying
- b) DNA-polymerase I and DNA-polymerase II

5. Match the following (6 marks)

Reaction Enzyme

- i. Fructose.1,6-diphosphate dihydroxyacetone phosphate + glyceraldehydes 3 –phosphate
- ii. ATP+AMP ADP+ADP
- iii. Fructose.1,6 diphosphate+H<sub>2</sub>O Fructose 6 phosphate + P<sub>0</sub>
- iv. ATP + creatine ADP + phosphocreatine
- v. Lactate + NAD<sup>+</sup> pyruvate + NADH + H<sup>+</sup>
- vi. ATP + UDP ADP + UTP

- (a) Hexose diphosphatase
- (b) Phosphotransferases
- (c) Fructose-diphosphate aldolase
- (d) Lactate dehydrogenase
- (e) Nucleoside diphosphate kinase
- (f) Adenylate kinase

6. Match the following (5 marks)

Condition Manifestation

- |                                |  |
|--------------------------------|--|
| i. Hydrocephalus               | (a) Non-noxious stimulating pain                 |
| ii. Hyperalgesia               | (b) Enlargement of thyroid gland                 |
| iii. Wernicke's encephalopathy | (c) Accumulation of cerebrospinal fluid in brain |
| iv. Acromegaly                 | (d) Beri Beri affecting brain                    |
| v. Grave's disease             | (e) "a reversion to the gorilla type"            |
|                                | (f) Colour blindness                             |

7. Match the following (5 marks)

Flavour changes in milk Causative organism

- |                         |                              |
|-------------------------|------------------------------|
| i. Sour or acid flavour | (a) Streptococcus maltigenes |
| ii. Proteolysis         | (b) Escherichia coli         |
| iii. Burnt flavour      | (c) Pseudomonas fluorescens  |
| iv. Turnip like flavour | (d) Pseudomonas mercuriolens |
| v. Potato like flavour  | (e) Shigella sonnei          |

**SECTION C: (2 X 15 = 30 marks)**

Answer any TWO questions:

1. Write on replication of DNA.
2. Describe the structure, function and disorders of the adrenal gland.
3. Classify acid – base disorders. Explain the causes and discuss their compensatory mechanisms.

## IDA REGISTERED DIETITIAN EXAMINATION

November 2005

### **Paper II (Nutrition, Dietetics, Food Service Management)**

Time : 2 Hrs

Answer All Questions

Marks : 100

#### **Section – A (10 x 2 = 20 Marks)**

Give the correct answer

1. A 'Salamander' used in the food production area refers to -

- a) A grill in the oven
- b) A rotisserie in the oven
- c) A back shelf over the rear of the range
- d) A cabinet inside the cooking range

2. A vivid but precise description of a product is

- a) invoice
- b) specification
- c) budget
- d) work schedule

3. A manager seeks to improve the unit and adapts if it the changing conditions in the environment. He is playing the role of a -

- a) monitor
- b) initiator
- c) figurehead
- d) negotiator

4. Xerophthalmia is most common in the age group

- a) 3 – 6 months
- b) 6 – 12 months
- c) 1 –3 years
- d) 3 – 5 years

5. MUAC of 13.2cms indicates

- a) Satisfactory nutrition
- b) Moderate nutrition
- c) Severe nutrition
- d) Obesity

6. What is the cut off waist measure for women to prevent diabetes

- a) 28 ins
- b) 30 ins
- c) 32 ins
- d) 34 ins

7. Which of these two foods contain cholesterol

- a) Fish
- b) Walnut
- c) Coconut
- d) Milk

8. Low Residue diet is recommended for

- a) Constipation
- b) Diabetes mellitus
- c) Osteoporosis
- d) Partial intestinal obstruction

9. Dietary requirement for a patient on hemodialysis is

- a) High protein with normal salt, normal fluid and normal potassium
- b) Restricted protein, restricted salt, restricted fluid with normal potassium
- c) High protein with restricted salt, restricted fluid and restricted potassium
- d) Restricted protein with normal salt, normal fluid and normal potassium

10. Which of these is a good source of Selenium and at the same time increases the risk of colon cancer

- a) meats
- b) cereals
- c) green leafy vegetables
- d) nuts

### SECTION B (50 marks)

1. Fill in the blanks (5 x 2 = 10 marks)

- a) ARF is used to alter the \_\_\_\_\_ in infant food and can also be given to the \_\_\_\_\_.
- b) "A La Carte" and "Du Juar" are types of \_\_\_\_\_ whereas doubledecker and club are \_\_\_\_\_.
- c) \_\_\_\_\_ service is characterized by advance preparation of most foods and a maximum of self service.
- d) At birth the head size is about \_\_\_\_\_ of the anticipated adult head size.
- e) The two voluntary, non-profit organizations that promote the profession of nutrition and dietetics in India are \_\_\_\_\_ and \_\_\_\_\_.

2. Expand the following (5 x 1 = 5 marks)

- (a) HACCP
- (b) AGMARK
- (c) BCAA
- (d) RDI
- (e) AIDS

3. (5 x 2 = 10 marks)

- (a) If the selling price of a meal is Rs 25 what will its food cost be if it is 55%
- (b) Give four considerations which relate to the choice of any piece of mechanical catering equipment.
- (c) Give the energy yield of 2 pints of 20% dextrose and 1 pint of normal saline.
- (d) Define a reference woman.
- (e) State two micronutrients required to be supplemented for patients with Acute Respiratory Distress Syndrome.

4. (5 x 1 = 5 marks)

Match the following Food Calorie value per 100 gm

Whole wheat flour	27
Rajmah	32
Cabbage	346
Ripe papaya	87
White pomfret	341

5. (4 x 5 = 20 marks)

- List the advantages and disadvantages of using standardized recipes in hospital kitchens.
- Describe briefly the advantages of PEG over RTF.
- Name any of the problems of old age and the nutritional factors associated with each of the problem.
- Briefly give the causes and dietary recommendations for pernicious anaemia.

### **SECTION C**

Answer any two questions (2x15 = 30 Marks)

1. Give the diet plan with the calculations you would recommend for an oral cancer patient with a nasogastric tube – female 50yrs, height 160 cms, weight 45 kg, vegetarian from a middle income family.

2. A 70 year old male with a normal BMI has had a fracture on the neck of the femur and is hospitalized. He is an vegetarian, a borderline Diabetic ( blood sugar controlled only with diet and exercise), hypertensive (on medication) and has just been diagnosed with Hepatitis A. Plan the diet with calculations, you would recommend.

3. A 53 year old male, height 150 cms., weight 50 kgs., Diabetic since 11 years, presented with 8 kg weight loss in 2 months and uncontrolled sugar, with 24 hours proteinuria of 36 gm/day. Also presence of chylurea +++. How will you manage the nutrition care of this individual. Give the diet plan with calculations. The patient is on insulin as follows:  
3 doses of 12 units fast acting insulin  
with 10 units of long acting insulin at 10pm