

**First Semester Examination-2017**

**M.Sc. NUTRITION & DIETETICS**

Paper Code: NUD-103

Full Marks : 40

Time: 2 Hours

**Write the answer for each unit in separate sheet**

**Unit-V**

**Answer question no.1 & any 3 from the rest**

**Q. 1. Answer any five of the following** **1×5=5**

(a) The dietary fats are transported as

- |                                   |                   |
|-----------------------------------|-------------------|
| (i) Micelles                      | (ii) Chylomicrons |
| (iii) Fatty acid, albumin complex | (iv) Liposomes    |

(b) Blood urea decreases in all of the following condition except-

- |                     |                 |
|---------------------|-----------------|
| (i) Liver Cirrhosis | (ii) Pregnancy  |
| (iii) Renal Failure | (iv) Urea cycle |

(c) All of the following vitamins except one participate in TCA cycle-

- |                      |                  |
|----------------------|------------------|
| (i) Pantothenic acid | (ii) Lipoic acid |
| (iii) Folic acid     | (iv) Riboflavin  |

(d) The steps of Glycolysis between glyceraldehydes-3 phosphate & 3 phosphoglycerate involve all of the following except-

- (i) ATP synthesis
- (ii) Catalysis by phosphoglycerate kinase
- (iii) Oxidation of NADH to NAD<sup>+</sup>
- (iv) The formation of 1, 3-bisphosphoglycerate

(e) Which of the following is not an intermediate of the citric acid cycle?

- |                  |              |
|------------------|--------------|
| (i) Acetoacetate | (ii) Citrate |
|------------------|--------------|

- (iii) Oxaloacetate                      (iv) Succinyl Co A
- (f) An enzyme used in both glycolysis & gluconeogenesis is-
- (i) 3-phosphoglycerate kinase    (ii) Glucose-6 Phosphatase
- (iii) Hexokinase                      (iv) Phosphofructokinase-1

*(Turn Over)*

- (g) The key regulatory enzyme of fatty acid synthesis is-
- (i) Acetyl Co A synthase              (ii) Acetyl Co A carboxylase
- (iii) ketoacyl synthase              (iv) Thioesterase
- (h) Which of the following metabolic pathways does not generate ATP
- (i) Fatty acid oxidation              (ii) TCA cycle
- (iii) Glycolysis                      (iv) HMP pathway

Q. 2. (a) What do you mean by de-amination?

(b) Give an example of oxidative deamination.

(c) Describe the steps of urea cycle. 1+2+2=5

Q. 3. (a) What is  $\beta$ -oxidation?

(b) How fatty acid is activated for  $\beta$  -oxidation?

(c) Describe the role of carnitine in transport of activated fatty acid from cytoplasm to mitochondria. 1+1+3=5

Q. 4. (a) Write the name & of site of fatty acid synthesis?

(b) Write the name of rate limiting enzyme for fatty acid synthesis.

- (c) Mention the role of glucagon and insulin in regulation of fatty acid synthesis. 1+1+3=5

Q.5. (a) What is glycolysis?

(b) Write the role of aldosterone in the glycolysis process.

(c) Write the steps of glycogenolysis by a flow chart. 1+1+3=5

Q.6. (a) State the role of hormonal regulation of blood glucose.

(b) Write the name of carbohydrate metabolic disorders. 3+2=5

Q.7. (a) Write the name of the major steps in protein biosynthesis.

(b) Describe the initiation process of protein synthesis.

(c) Write the name of enzyme and co-enzyme involved in transamination.

1+3+1=5

*(Turn Over)*

### Unit- VI

**Answer question no.8 & any 3 from the rest**

Q. 8. **Answer any five of the following** **1×5=5**

(a) Which vitamin is excreted through urine?

i) Vitamin A              ii) Vitamin D

iii) Vitamin K            iv) Vitamin C

(b) Which one of these vitamins is involved in calcium homeostasis?

- i) Vitamin B<sub>12</sub>
- ii) Vitamin B<sub>6</sub>
- iii) Vitamin D
- iv) Vitamin K

(c) Which one of these vitamins may lead to hemolytic anemia?

- i) Vitamin B<sub>6</sub>
- ii) Vitamin B<sub>12</sub>
- iii) Vitamin D
- iv) Vitamin E

(d) Which one of these vitamins has a role in oxidation & reduction reaction?

- i) Biotin
- ii) Folate
- iii) Riboflavin
- iv) Vitamin E

(e) Deficiency of which vitamin may lead to megaloblastic anemia?

- i) Vitamin B<sub>6</sub>
- ii) Vitamin B<sub>12</sub>
- iii) Vitamin D
- iv) Vitamin K

(f) Which one of these vitamins has a role as an antioxidant?

- i) Biotin
- ii) Folate
- iii) Vitamin E
- iv) Niacin

(g) Which one of these vitamins is involved in controlling cell differentiation and proliferation?

- i) Biotin
- ii) Folate
- iii) Vitamin E
- iv) Niacin

(h) Which food is restricted in hypertensive patient?

- i) Red Meat
- ii) Fruits
- iii) Vegetables
- iv) Milk & milk product

*(Turn Over)*

- Q. 9. (a) How oxidative stress is related to chronic diseases?  
(b) "Vitamin E act as an antioxidant"-justify this statement.  
(c) Justify the dismutase activity of SOD. 2+2+1=5
- Q. 10. (a) What are the deficiency disorders developed due to the folate & vitamin B12.  
(b) State the role of Zinc for pregnant women. 2+3=5
- Q. 11. (a) Write the difference between primary & secondary hypertension.  
(b) Discuss about rennin-angiotensin system in blood pressure regulation.  
(c) "Salt is a crucial factor for pathogenesis of hypertension"- justify this statement. 1+2+2=5
- Q. 12. (a) Describe the role of calcitriol on bone growth and development  
(b) What is bone remodelling?  
(c) Why excess calcium is required for growing child? 2+1+2=5
- Q. 13. (a) Write the role of copper in cognitive development.  
(b) Define haemochromatosis.  
(c) What is goitrogens? 2+2+1=5
- Q. 14. (a) Briefly discuss about the role of iodine in thyroid hormone regulation.  
(b) What is lactoferrin?  
(c) What is hepcidin? 3+1+1=5

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