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BDS-102
BDS–I Year
Examination, Jan.-2022

General Human Physiology & Biochemistry Nutrition & Deities

Time: Three Hours

Marks: 35

SECTION -A

Notes:-

(i) Answer should be in serial order.

(ii) Draw diagram wherever necessary.

Q.1 Long answer type questions. 2x5=10

(i) Write down the biochemical functions of Vitamin D and its role in calcium metabolism?

(ii) Explain Beta oxidation of Fatty Acid and its regulation?

Q.2 Write short notes on- 5x3=15

(i) Isoenzymes.

(ii) Classify Mutation with examples.

(iii) Define and Classify Jaundice.

(iv) Role of Fluoride in Dental Health.

(v) Classify amino acids based on nutritional importance.

Q.3 Multiple Choice Questions: 1 x 10=10

(i) Bile acids are formed from:
- (a) Lipoproteins (b) Amino Acids
- (c) Bilirubin (d) Cholesterol

(ii) The amino Acid required for synthesis of Haem is:
- (a) Lysine (b) Glutamic Acid
- (c) Glycine (d) Glutamine

(iii) The most abundant protein present in body is:
- (a) Collagen (b) Albumin
- (c) Hemoglobin (d) Globulin

(iv) Detoxification of Drugs is controlled by:
- (a) Cytochrome (b) Cytochrome C
- (c) Cytochrome P450 (d) Cytochrome A

(v) Normal Blood pH is:
- (a) 6.8- 7.0 (b) 7.38 – 7.4
- (c) 7.0 – 7.12 (d) 7.7 – 8.0

(vi) A balanced diet consistsof:
- (a) 20% proteins, 35% fats, 45% carbohydrates
- (b) 25% proteins, 25% fats, 50% carbohydrates
- (c) 20% proteins, 25% fats, 50% carbohydrates
- (d) 35% proteins, 15% fats, 50% carbohydrates

(vii) Which of the following is precursor of adrenaline and thyroxine synthesis?
- (a) Tyrosine (b) Phenylalanine
- (c) Tryptophan (d) None of the above

(viii) Oligosaccharide is-
- (a) Maltose (b) Fructose (c) Dextrin (d) Glucose

(ix) Final common Oxidative pathway which integrates Oxidative Products of Fats, Proteins and Carbohydrates is also known as:
- (a) Ketogenesis (b) Citric Acid Cycle
- (c) Gluconeogenesis (d) Glucuronic Pathway

(x) Non-Coding Sequences in a gene are known as:
- (a) Cistron (b) Introns (c) Nonsense codons (d) Exons

SECTION –B

Marks: 35

Notes:-

(i) Answer should be in serial order.

(ii) Draw diagram wherever necessary.

Q.1 Long answer type questions. 2x5=10

(i) Describe the Biochemical functions, sources and metabolism of Calcium?

(ii) Describe diabetes mellitus, types, complications and treatment.

Q.2 Write short notes on 5x3=15

(i) Glycosaminoglycans
(ii) Competitive Inhibition
(iii) Gout
(iv) Genetic Code
(v) Fluorosis

Q.3 Multiple Choice Questions: 1 x 10=10

(i) The intracellular cation present in maximum concentration is:
(a) Potassium (b) Magnesium
(c) Sodiumd (d) Calcium

(ii) The polypeptide that protects RBC membrane:
(a) Oxytocin (b) Glutathione
(c) Vasopressin (d) Angiotensin

(iii) A point mutation in β globin gene changing the codon from glutamate to valine will likely cause what disease:
(a) Sickle cell anemia (b) Cooley Hb
(c) Thalassemia (d) Methemoglobinemia

(iv) Hormones secreted form adrenal medulla are
(a) Glucagon (b) Cortisols
(c) Norepinephrin (d) Aldosterone

(v) The major fuel for the brain after prolonged starvation:
(a) Glucose (b) Ketone bodies
(c) Fatty acids (d) Glycerol

(vi) The concentration of the following is inversely related to the risk of cardiovascular diseases:
(a) HDL (b) VLDL
(c) LDL (d) IDL

(vii) Which of the following vitamin is required for collagen synthesis?
(a) Vitamin C (b) Vitamin B1
(c) Vitamin B12 (d) Folic acid

(viii) Mutations can be caused by:
(a) Ultraviolet radiations (b) Alkylating agents
(c) Ionizing radiations (d) All of the above

(ix) All of the following are associated with metabolic acidosis except:
(a) Rise in blood pH (b) loss of H^+
(c) Rise in HCO_3^- level (d) Decrease in HCO_3^- level

(x) Serum urea and Creatinine are markers of:
(a) Liver function (b) Pancreatic function
(c) Renal function (d) Gastric Function

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SECTION –B

Marks: 35

Notes:-

(i) Answer should be in serial order.

(ii) Draw diagram wherever necessary.

Q.1 Long answer type questions. 2x5=10

(i) Define cardiac cycle. Draw a well labeled diagram of cardiac cycle.

(ii) Define blood and write about erythropoiesis in detail.

Q.2 Write short notes on 5x3=15

(i) Functions of hypothalamus.
(ii) Functions of ADH.
(iii) Saliva.
(iv) Regulation of Blood pressure.
(v) Define immunity.

Q.3 Multiple Choice Questions: 1 x 10=10

(i) Normal average count. of Red Blood cells per cubic millimeter of Blood is
(a) 11000 (b) 35000
(c) 300000 (d) 500000

(ii) The polypeptide that protects RBC membrane:
(a) Oxytocin (b) Glutathione
(c) Vasopressin (d) Angiotensin

(iii) Life span of RBC -
(a) 12 Days (b) 12 weeks
(c) 120 Days (d) 120 weeks

(iv) Hormones secreted form adrenal medulla are
(a) Glucagon (b) Cortisols
(c) Norepinephrin (d) Aldosterone

(v) The major fuel for the brain after prolonged starvation:
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(viii) Mutations can be caused by:
(a) Ultraviolet radiations (b) Alkylating agents
(c) Ionizing radiations (d) All of the above

(ix) Scurvy is a deficiency of
(a) Vit A (b) Vit B
(c) Vit C (d) Vit K

(x) Normal value of Blood pressure-
(a) 120/ 80 (b) 80/ 120
(c) 160/ 100 (d) 100/ 160

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