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BRAINWARE UNIVERSITY

Term End Examination 2023
Programme – B.Optomety-2022
Course Name – Ocular Biochemistry
Course Code - BOPTOC203
(Semester II)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

(i) Cite the end product in protein metabolism-

- | | |
|--------------|-------------|
| a) Ammonia | b) Urea |
| c) Uric Acid | d) Nitrogen |

(ii) Cite the name of antibody found in tear film

- | | |
|--------|--------|
| a) IgG | b) IgD |
| c) IgA | d) IgE |

(iii) Retina is composed of a group of cells named as-

- | | |
|---|--------------------------------------|
| a) Epithelial cells and endothelial cells | b) Rod and cone cells |
| c) Mesenchymal cells | d) Mesenchymal and endothelial cells |

(iv) Give an example of a solution made of solid in solid is-

- | | |
|-----------|----------|
| a) Fog | b) Smoke |
| c) Bronze | d) Air |

(v) Identify which one is not colloid

- | | |
|-----------|---------------|
| a) Milk | b) Mud |
| c) Butter | d) Boric Acid |

(vi) When the eye is exposed to light, the 11-cis-retinal component of rhodopsin is converted to-

- | | |
|---------------------------|----------------------|
| a) opsin | b) All trans retinal |
| c) Photopsin and iodopsin | d) photopsin |

(vii) Identify which is not a function of insulin

- | | |
|------------------------------|-----------------|
| a) Decreasing glycogenolysis | b) Lipogenesis |
| c) Gluconeogenesis | d) Glycogenesis |

- (viii) Explain the term electrophoresis-
- a) movement of particles from higher concentration to lower concentration
- b) movement of charged particles through an electrolyte when subjected to an electric field.
- c) movement of particles from lower concentration to higher concentration
- d) movement of particles by diffusion
- (ix) Chromatography is a physical method applied to separate and analyse-
- a) Simple mixtures
- b) complex mixtures
- c) Viscous mixtures
- d) Metals
- (x) Write the name of the final product in glycolysis-
- a) Malate
- b) Pyruvate
- c) Lactate
- d) Both 2 and 3
- (xi) In an experimental set up DNA sample is placed in gel-electrophoresis. DNA will migrate towards-
- a) positive electrode
- b) negative electrode
- c) anode or cathode
- d) electrode
- (xii) Write the name of steroid hormones-
- a) TSH and FSH
- b) Testosterone and progesterone
- c) LH
- d) hexokinase
- (xiii) Beer Lambert's law gives the relation between-
- a) Reflected radiation and concentration
- b) Scattered radiation and concentration
- c) Energy absorption and concentration
- d) Energy absorption and reflected radiation
- (xiv) Select the correct statement-
- a) Peptide hormone binds with cell surface receptor
- b) Steroid hormone binds with intra cellular receptor
- c) Both 1 and 2
- d) peptide hormone works independently
- (xv) SDS applied for western blotting is an-
- a) anionic agent
- b) cationic agent
- c) non-ionic agent
- d) anion exchanger

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Tell the difference between hypoglycemia and hyper glycemia (3)
3. Define secondary messenger with examples (3)
4. Describe the biochemistry of stroma in cornea of human eye (3)
5. Explain the action of acidic buffer with example (3)
6. Calculate what is the molarity of a sulphuric acid solution of density 1.20g/cm^3 containing 50% sulphuric acid by mass (3)

OR

Calculate the pH of a buffer solution containing 0.1 moles of acetic acid and 0.15 mole of CH_3COONa . The ionization constant for CH_3COOH is 1.75×10^{-5} (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Explain Diabetic lens and Diabetic Retina. (5)
8. Summarize the diagrammatic representation of TCA cycle (5)

9. Calculate the molarity of the solution which contains 32.0 g of methyl alcohol (CH₃OH) in 200 mL solution (5)
10. Explain the photo transduction pathway (5)
11. Illustrate the principle of colorimetry (5)
12. Total bilirubin of a patient is 2.3 mg/dl. Interpret the result with clinical diagnosis (5)

OR

Plasma glucose level of a patient is shown below-Fasting blood glucose - 145 mg/dl, Post prandial blood glucose 190 mg/dl. Correlate the result with respect to clinical diagnosis (5)
