

VINAYAKA MISSION'S RESEARCH FOUNDATIONS, SALEM
(Deemed to be University)

B.OPTOMETRY DEGREE EXAMINATION – February 2020
First Year

GENERAL BIO-CHEMISTRY AND OCULAR BIO-CHEMISTRY

Time: Three hours

Maximum: 80 marks

I Choose the best answer

(10 x 1 = 10)

1. The following polysaccharide is composed of B-glycosidic bonds
 - a) Starch
 - b) Glycogen
 - c) Dextrin
 - d) Cellulose
2. The protein factory in the human body is
 - a) Liver
 - b) RBC
 - c) Spleen
 - d) Pancreas
3. The sterol exclusively found in animals is
 - a) Engosterol
 - b) Cholesterol
 - c) Stigmasterol
 - d) B-sitosterol
4. The non protein part of holo enzyme is
 - a) Coenzyme
 - b) Apoenzyme
 - c) Cofactor
 - d) Prosthetic group
5. Bitot's spot is caused by
 - a) Vitamin D deficiency
 - b) Vitamin E deficiency
 - c) Vitamin A deficiency
 - d) Vitamin K deficiency
6. The posterior segment of the eye include the all except
 - a) Retina
 - b) Cornea
 - c) Choroid
 - d) Vitreous humour
7. Formation of aqueous humour include the following process except
 - a) Diffusion
 - b) Secretion
 - c) Ultra filtration
 - d) Absorption
8. The outer most layer of Tear film
 - a) Lipid layer
 - b) Aqueous layer
 - c) Mucus layer
 - d) Mucin layer
9. An important factor for the maintenance of transparency of lens is
 - a) Lens water
 - b) Proteins
 - c) Carbohydrates
 - d) Lipids
10. Retina appears
 - a) Red colour
 - b) Purplish red
 - c) Yellow colour
 - d) Violet colour

II State whether the following statements are **TRUE** or **FALSE** (10 x 1 = 10)

1. Cellulose can be digested by human beings.
2. The end product of B oxidation is ketone bodies.
3. Free radicals damage biological membrane.
4. Selenium acts as an antioxidant.
5. Arachidonic acid is not an essential fatty acid.
6. Lens weight and thickness increase steadily with age.
7. Cornea has a rich supply of sensory nerve endings.
8. **Rod** cells are responsible for colour vision.
9. Tears does not have anti bacterial activity.
10. Aqueous humour maintains intraocular pressure.

III Fill in the blanks: (10 x 1 = 10)

1. In TCA cycle, acetyl CoA is converted into _____
2. Enzymes are _____
3. Vitamin A deficiency causes _____
4. The mineral involved in initiation and maintaining heart beat is _____
5. A substance that delays or inhibits oxidation of a substrate is called _____
6. Normal aqueous production rate is about _____
7. Capsule of the crystalline lens is thinnest at _____
8. The most common type of congenital cataract is _____
9. _____ is the most sensitive part of the retina.
10. Vitreous humour is made up of collagen and _____

IV Answers any **FIVE** of the following: (5 x 6 = 30)

1. Write the functions of copper and Iron.
2. Give a short note on functions and deficiency of Vitamin C.
3. Explain the classification of lipids.
4. Explain the mechanism of action of enzymes.
5. Briefly explain Wald's visual cycle.
6. Write about sorbital pathway.
7. Write in detail about the layers of the retina.

V Write an essay on any **TWO** of the following: (2 x 10 = 20)

1. Explain in detail about Glycolytic pathway.
2. Write about the functions of aqueous humour and maintenance of intraocular pressure.
3. Write in detail about composition, Layers and functions of tears.

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