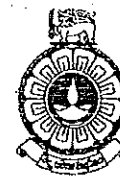


**The Open University of Sri Lanka**  
**Foundation Certificate in Science - 2016/2017**  
**Final Examination**  
**Biology II - BZF 2208**  
**Duration - Three hours**



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Date - 22.10.2017

Time - 9.00am -12.00 noon

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Index Number -

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The Question paper consists of two parts - I and II

Answer all questions in Part I (A &B) and any three (03) questions from Part II

- Answers for the Multiple Choice Questions in part I–A should be provided by placing X in the relevant cage indicating the most correct answer in the MCQ box provided.
  - Answers for the structured essay question in part I-B should be written in the space provided in the question paper.
    - At the end of the examination submit part 1-A ( MCQ )question paper with your answer script.
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## PART I -A

1.

1.1 Which one of the following is not an enzyme of pancreatic juice?

- (a) Pepsin
- (b) Trypsin
- (c) Chymotrypsin
- (d) Enterokinase

1.2 The principal cation in extracellular fluid is

- (a) Sodium
- (b) Potassium
- (c) Calcium
- (d) Phosphorous

1.3 The hormone released by posterior lobe of pituitary gland is concerned with,

- (a) metabolism of carbohydrates.
- (b) stimulation of thyroid.
- (c) contraction of uterus.
- (d) expression of secondary sexual characters.

1.4 Which one of the following is a function of mucin ,

- (a) lubricate the food material.
- (b) protect the inner mucosa of the stomach from the proteolytic digestion.
- (c) digest starch.
- (d) digest protein.

1.5 An adult animal collected from a fresh water habitat showed the following features.

- (A) internal gills (b) eyes (c) walking legs (d) laterally flattened body

This animal can be classified under the class

- (a) Polychaeta
- (a) Insecta
- (c) Crustacea
- (b) Amphibia

1.6 Which one of the following taxonomic groups is **not** found in freshwater habitats of Sri Lanka?

- (a) Arthropoda
- (b) Cnidaria
- (c) Echinodermata
- (d) Mollusca

- 1.7 Select the **correct** statement regarding the human alimentary canal.
- (a) Intestinal glands are found in the villi.
  - (b) Most of the consumed vitamins are absorbed in the small intestine.
  - (c) Protein digestion begins in the buccal cavity.
  - (d) Muscle layers are highly developed in the small intestine.
- 1.8 In a normal healthy person, the kidney
- (a) controls the amount of protein in the blood.
  - (b) regulates the amount of sugar in the blood.
  - (c) controls the osmotic concentration of the blood and tissue fluids.
  - (d) does not do any of the above.
- 1.9 Which one of the following statements is **correct** regarding action potential?
- (a) It does not require ATP.
  - (b) Its duration is extremely short.
  - (c)  $\text{Na}^+$  and  $\text{Ca}^{++}$  are essential for its production.
  - (d) It can spread along an axon.
- 1.10 Which of the following factor is not homeostatically regulated in human body?
- (a) Water
  - (b) Glucose
  - (c) Temperature
  - (d) Urea
- 1.11 In a food chain of grassland ecosystem, the top consumers are
- (a) herbivores.
  - (b) carnivores.
  - (c) either herbivores or carnivores.
  - (d) bacteria.
- 1.12 Which one of the forest types shows a long summer period and short winter period
- (a) Tropical rain forest.
  - (b) Tropical deciduous forest.
  - (c) Tropical evergreen forest.
  - (d) Equatorial rain forest.
- 1.13 Biomes are
- (a) Aquatic vegetation type.
  - (b) Major ecological grouping of plants.
  - (c) Large sized ecosystems in the world.
  - (d) Major ecological grouping systems .
- 1.14 *Nitrosomanas* and *Nitrobacter* are considered as,
- (a) chemoheterotrophs
  - (b) chemoautotrophs

- (c) photoautotrophs
- (d) heterotrophs

1.15 Which one of the following fin types of a bony fish provides the powerful pushing force for swimming?

- (a) Pectoral fin
- (b) Caudal fin
- (c) Pelvic fin
- (d) Dorsal fin

1.16 Ophiuroids differ from all the other echinoderms because they,

- (a) possess pedicellaria
- (b) have fine arms.
- (c) possess internal skeleton.
- (d) do not have an anus.

1.17 Ornithine cycle is the process of urea formation and it operates in,

- (a) mitochondria
- (b) golgi complex
- (c) oxysomes
- (d) ribosomes

1.18 Which one of following organisms is **least** harmful to human?

- (a) *Plasmodium vivax*
- (b) *Entamoeba coli*.
- (c) *Wucheria bancrofti*
- (d) *Clostridium tetani*

1.19 A hormone is best described as

- (a) an internal secretion with many effects.
- (b) a chemical secreted by a gland accelerates which chemical reactions.
- (c) an internal secretion that is transported through ducts.
- (d) a chemical that is transported in blood which acts in a regulatory capacity

1.20 Select the correct order of the layers of the atmosphere from the surface of earth to upwards

- (a) Stratosphere, Mesosphere, Thermosphere, Ionosphere, Ozone layer.
- (b) Troposphere, Mesosphere, Thermosphere, Ozone layer, Ionosphere.
- (c) Stratosphere, Ozone layer, Mesosphere, Troposphere, Ionosphere.
- (d) Troposphere, Stratosphere, Mesosphere, Ionosphere.

1.21 Which one of the following feature is common to both cardiac muscle fibre and smooth muscle fibre ?

- (a) Striated structure
- (b) Spindle shape
- (c) Never fatigue
- (d) Involuntary control

1.22 The most diverse oceanic communities live in the,

- (a) abyssal zone.
- (b) littoral zone.
- (c) neritic zone.
- (d) oceanic zone.

1.23 Which one of the following enzymes will react on certain carbohydrates ?

- (a) Trpsin
- (b) Chymotripsin
- (c) Salivary amylase
- (c) Pepsin.

1.24 Select the **correct** statement regarding the paddy bug.

- (a) It lays eggs on the leaves of paddy plant.
- (b) It is mainly harmful to young paddy plants.
- (c) It can be controlled by using trap crops.
- (d) It is harmful only during the nymphal stage.

1.25 When a person is faced with danger the organ that immediately secretes a hormone is,

- (a) Adrenal bodies.
- (b) Pituitary body.
- (c) Thyroid gland
- (e) Spleen

**Structured essay questions (Part I- B)**

(A).

(i) List the different types of white blood cells found in human blood.

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.....

(ii) Name the most abundant agranular white blood cell type in human man ?

.....

(iii) What is the main function of human blood platelets ?

.....

(iv) What is a blood pigment?

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(v) Name two iron contained blood pigments found in animals ?

.....

(vi) Name the blood pigment seen in crustaceans ?

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(B).

(vii) What are the two main parts of the human nervous system?

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(viii) Name the three membranes which are covering the brain.

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(ix) Name the band of fibres that involved to join the two cerebral hemisphere.

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(x) Which part of the brain is responsible to maintain body equilibrium?

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(xi) How many pairs of cranial nerves and spinal nerves seen in the human nervous system.

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(C).

(xii) Name three concentric layers of eye ball.

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(xiii) Among the above mentioned layers, which layer is the sensitive for light.

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(xiv) Name the two types of photoreceptors found in the above mentioned layer (xiii).

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(xv) Among the above mentioned receptors , which type of receptors helps for colour vision.

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**PART B****Essay questions**

Answer any three (03) questions

- (2). Explain how temperature is regulated in human body.
- (3) (a) With suitable diagrams describe the structure of the human ear.  
(b) Briefly explain the mechanism of hearing in the human ear.
- (4) (i) List the characteristic features of phylum Mollusca.  
(ii). Name the classes of this phylum and briefly explain characteristic features of these classes.
- (5) (a) Briefly discuss the basic structure of the vertebrate motor neuron.  
(b) Explain the process of chemical transmission at a synapse.
- (6) Write short notes on any two (02) of the following
  - (a) Environment pollution
  - (b) Causes for bio diversity degradation
  - (c) Asexual reproduction methods in invertebrates
  - (d) Osmoregulation in aquatic animals