



G.C.E. A/L Examination June - 2015

Conducted by Field Work Centre, Thondaimanaru

In Collaboration with

Zonal Department of Education Jaffna.

Grade :- 12 (2016)

Part - II

Biology

A. Structured Essay

❖ Answer all questions in this paper itself.

1. A. i). Indicate three features of mono saccharides.

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ii). Name the mono saccharides that make disaccharides.

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iii). a. Give the elemental composition of proteins which is one of the major organic substance in organisms.

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b. How the quaternary protein structure is differ from other structural proteins?

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c. Indicate an example protein for the following functions:

- 1). Structural
- 2). Catalyst
- 3). Defense
- 4). Storage

iv). Give the bonds found in a quaternary protein structure except the peptide bond.

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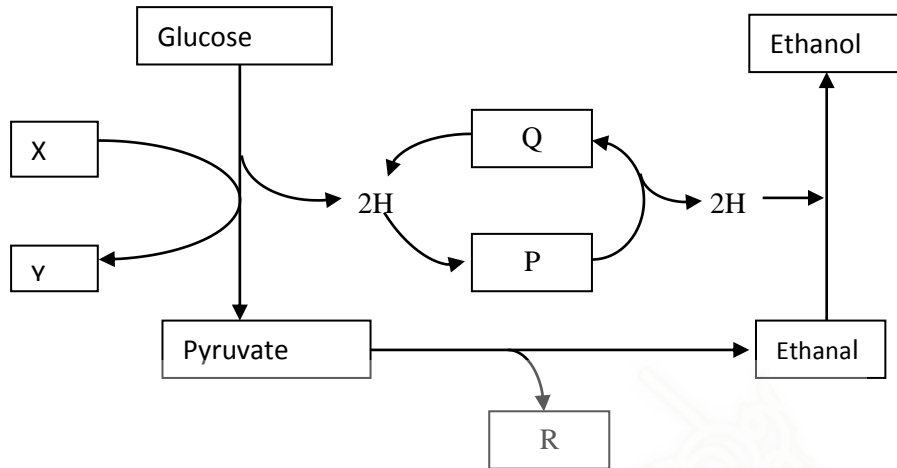
v). A student likes to test a food sample for presence of protein in that food. Give a simple test that could be made in the school laboratory.

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B. i).



a. Identify the above process and name an organism that performs the above.

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b. Name P,Q,X and Y in the above process.

P.....

X.....

Q.....

Y.....

c. Identify R and what is the name of its elimination?

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ii). a. Another process occurs without the elimination of R in organisms. Give that name.

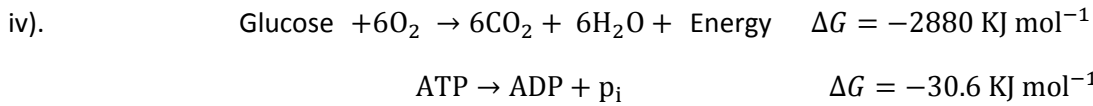
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b. Name two human cells that perform the above process mentioned in (ii.a).

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iii). In which compound the final electron acceptor of aerobic respirations are united?

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Calculate the energy conversion efficiency of aerobic respiration with number of ATP molecules and above data.

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C. i).a. What is meant by the species name of an organism?

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b. Write the name of a biologist regarding to the following work.

- 1). Classified plants according to trees and shrubs.....
- 2). After naming of prokaryotic and eukaryotic methods.....
- 3). Classify a higher level over Kingdom.....

ii). Some characters (1-8) related to Kingdom Protista are given below. Place a (✓) mark against the phylum/phyla

for the particular character.

	Character	Chrysophyta	Rhizopoda	Phaeophyta	Chlorophyta
1	Starch food storage				
2	No cell wall				
3	Chlorophyll C				
4	Locomotory structure				
5	Pectin				
6	Manitol food storage				
7	Unicellular				
8	No food storage				

iii). A. Annelida B. Platyhelminthes C. Mollusca D. Nematoda E. Arthropoda

Which of the above phylum/phyla contain/s the characters given below.

- a. Well developed coelome
- b. Prominent cephalization.....
- c. No exo or endo skeleton.....
- d. Gills.....
- e. Lacks cilia.....

2. A. i). Symbiotic associations can be beneficial to both organisms or it can be beneficial to one organism, or it can be harmful to one organism. Indicate whether following symbiotic relationships are beneficial (+), harmful (-), do not affect (0) each of the following organism. Mark either +, - or 0 in the cages right to each organism.

	Organism I	Notation	Organism II	Notation
1	<i>Rhizobium</i>		Soya bean	
2	<i>Dentrobium</i> (Orchid).		<i>Dipterocarpus</i>	
3	<i>Necator americanus</i>		Human	
4	Hermit crab		Sea anemone	
5	<i>Loranthus</i>		Mango tree	

ii). What are essential elements to plants?

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iii). Given are some essential elements to plants. Indicate one important mode of absorption for each element.

N
 P
 S
 Fe

iv). Give the parts of the human large intestine.

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v). Give four components which are absorbed by large intestine.

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B. i). Give the reason for that the expiration is a passive process.

.....

ii). a. Give the locations of the chemo receptors responsible for the control of respiratory process in human.

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b. Which blood component is detected by the above mentioned chemo receptors.

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iii). Which is the receptor found in the control of respiratory process, that is a non chemoreceptor and state its location

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iv). In the respiratory areas of the pons varolli,

a. Which increases the inspiration?

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b. Which inhibits the inspiration?

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v). a. What is tidal volume?

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b. What is residual volume?

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c. What is vital capacity? And what is its volume?

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vi). a. What is the reason for the reduction of gaseous exchange surface when smoking cigarette?

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b. Indicate two disorders in human due to pulmonary hyper tension.

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C. i). a. What is blood pressure?

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b. Give the two components of blood pressure and indicate the normal values of them.

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c. How do you term the difference between the two components you mentioned above (C ib)?

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ii). Indicate four factors that responsible for the maintenance of blood pressure within a normal range.

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iii). a. What is hyper tension?

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b. Write two impacts of hyper tension in human.

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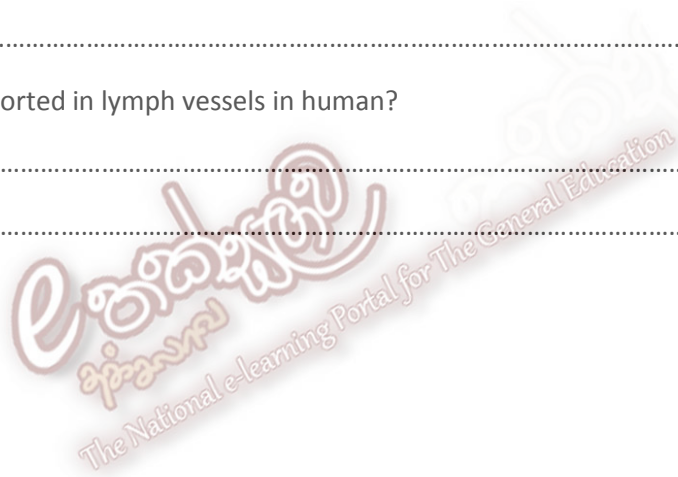
iv). Indicate a diagnostic blood test for the following human diseases.

a. Dengue

b. Typhoid

v). How is lymph transported in lymph vessels in human?

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3. A. i). Give two factors that responsible for the speed of transmission on nerves.

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ii). a. What is the functional unit of the nervous system of vertebrates?

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b. What is reflex action?

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iii). the central nervous system of human is surrounded by three layers of membranes called meninges.

Name them in the order from outer to inner.

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iv). Name the parts of the human brain derived from embryonic hind brain.

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v). Name the part of the human brain of the following functions.

- a. Controls the sneezing and coughing
- b. Reflex movements of head, neck and trunk
- c. Regulation of body temperature
- d. Initiation of voluntary muscle contraction
- e. Helps to integrate the information travelling up and down
- f. Integrates sensory information and relays it to the higher centres of the brain

B. i) Indicate the characters found in a receptor.

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ii). Indicate the stimulation detect by the following receptor or cell.

- a. Meissner's corpuscles
- b. Pacinian corpuscles
- c. Bulbs of Krauses's
- d. Cone

iii). Indicate three photo receptors found in invertebrates.

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iv). Give two major disorders found in human eye and indicate a reason for each disorder.

Disorder	Reason
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C. i). What is an animal hormone?

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ii). What are the differences found between a hormone and a neuro transmitter ?

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iii). For each of the hormone of human given below state the site of production and **one** main function.

Hormone	Site of production	Main function
a. Growth hormone
	
b. ADH
	
c. Cortisol
	