



FWC

# 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)

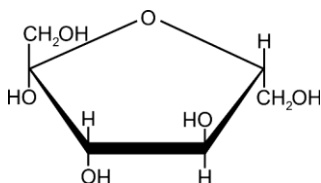
Biology

Time :- Three hours

## Part I

Answer all questions

1.



Which of the following statement regarding the given sugar molecule above is correct?

- 1). It is a non reducing sugar
  - 2). It is a constituent of nucleotide
  - 3). It is not involved in the formation of poly sacchrides
  - 4). It gives sucrose with glucose by joining glycosidic bonds
  - 5). It does not give positive reaction with Benedict's reagent.
2. Which of the following property of water is favourable to aquatic organisms in the polar regions?
- 1). Transparency to light
  - 2). Anomalous expansion of volume on freezing
  - 3). Habitat
  - 4). High latent heat of fusion
  - 5). Polarity
3. Which one of the following **cannot** be an electron acceptor in bio chemical reactions in organisms?
- 1). Pyruvate
  - 2). Molecular oxygen
  - 3). Acetaldehyde
  - 4). Water
  - 5). NADP
4. Which one of the following statements regarding reactions of photo synthesis in  $C_4$  plants is correct?
- 1). NADPH is formed only in light reactions
  - 2). Pyruvate is produced at mesophyll cell in the presence of light
  - 3). Oxygen, product of light reactions, generally does not react with PEP
  - 4). Malate actively transported to the bundle sheath cells from the mesophyll cells
  - 5). Bundle sheath cell produce their own energy requirements only by themselves.
5. Which of the following organelle/structure maintains the osmotic balance of a cell?
- 1). Vacuole
  - 2). Ribosome
  - 3). Lysosome
  - 4). Centrirole
  - 5). Plasma membrane
6. a. Tubulin    b. lignin    c. Actin    d. Keratin    e. Myosin
- Which of the above found in the cytoskeleton?
- 1) a, b, c
  - 2).a, c, e
  - 3).a, c, d
  - 4).c, d, e
  - 5).a, d, e
7. Which one of the following statements regarding enzymes is **incorrect**?
- 1). FAD is needed for some functioning of enzymes
  - 2). Enzymes increase the activation energy of a reaction which acts as catalysts
  - 3). Some metallic ions activate the enzyme reactions
  - 4). Non competitive inhibitors reversibly act on enzyme reactions
  - 5). Beyond an optimum temperature rate of enzyme reaction doubles with every increase of  $10^\circ\text{C}$ .

8. Domain Bacteria differs from Domain Archaea. Because Bacterial,
- 1). cell wall consists of lipids that are branched
  - 2). growth are inhibited by antibiotics
  - 3). protein synthesis starts with methionine
  - 4). organelles do not bounded with membrane
  - 5). protein synthesis involved with many RNA polymerases
9. Which of the following statement regarding Kingdom Protista is correct?
- 1). Cellulose and pectin found as cell wall components in phylum Phaeophyta
  - 2). Manitol found in Chrysophyta as storage food
  - 3). Only the reproductive cell contains flagella in Rhodophyta
  - 4). Chlorophyta contains only unicellular organisms
  - 5). Rhizopodes capture food by pseudopodia and having heterotrophic nutrition
10. Which of the following character is only found in mollusks and not found in Arthropods?
- 1). Tentacle
  - 2). Statocyst
  - 3). Gonadal ducts
  - 4). Regeneration
  - 5). Gills
11. Which of the following character **cannot** be used to distinguish a cartilaginous fish from a bony fish?
- 1). Heterocercal caudal fin
  - 2). Opened many gill slits
  - 3). Placoid scales
  - 4). Eye without lids
  - 5). Internal fertilization
12. Which of the following statement regarding nutrients of plants is correct?
- 1). Some inadequate elements to plants are conducted from older to younger tissues through phloem.
  - 2). Deficiency to potassium causes abnormal pigmentation on leaves
  - 3). Insectivorous plants get water and minerals such as nitrogen from the soil
  - 4). Essential elements to plants are only macro elements
  - 5). Trace elements are not very much needed by plants.
13. Which one of the enzymes of human digestive tract is **not** belongs to small intestine?
- 1). Enterokinase
  - 2). Maltase
  - 3). Amino peptidase
  - 4). Chymotrypsin
  - 5). Lipase
14. During the inspiratory process in human,
- 1). internal inter costal muscles contracts
  - 2). volume of the thoracic cavity decreases
  - 3). pressure in between plural cavity increases
  - 4). air exhaust from lungs
  - 5). diaphragm gets flattened
15. The following parts are related to the ventilation process in human.
- a. Inspiratory centre    b. Expiratory centre    c. Pnumotaxic area    d. Apneustic area
- Which of the above get inhibition when the stretch receptors are stimulated?
- 1). a and c
  - 2). a and b
  - 3). a and d
  - 4). c and d
  - 5). a, b and d
16. During at incipient plasmolysis, a plant cell
- 1). has a positive  $\psi_p$
  - 2). has a positive  $\psi_s$
  - 3). has equal values of  $\psi_w$  and  $\psi_s$
  - 4). has greater  $\psi_w$  than  $\psi_s$
  - 5). has equal values of  $\psi_p$  and  $\psi_w$

17. Followings are some events related to phloem transport.

- A. Water diffuse by osmosis from xylem vessels
- B. Sugar transported through mesophyll cells
- C. Sugar move down ward in the stem
- D. Leaf cells produce sugar
- E. Transfer dell upload sugar into sieve tubes

Select the correct sequence regarding phloem transport.

- 1). DBAEC    2). DABEC    3). DEBAC    4). DBEAC    5). DAEBC

18. Which of the following **does not** occur during the contraction of ventricles?

- 1). Opening of semi lunar valves
- 2). Closing of atrio- ventricular valves
- 3). Hearing of first heart sound 'lub' during the opening of semi lunar valves
- 4). Blood in the right ventricle pulled into the pulmonary artery
- 5). Electric stimulation conducted through AV node and bundle of His.

19. Haemoglobin,

- 1).only found in vertebrates
- 2).Mg is essential for its synthesis
- 3).gives carbamino haemoglobin with carbon mono oxide
- 4).found in equal concentrations in both male and female
- 5).deficiency causes anemia

20. Which one of the following statements regarding resting membrane potential of a human motor neuron is **incorrect**?

- 1). It is about -70mV
- 2). It occurs due to the unequal distribution of ions inside and outside of axolemma
- 3). It occurs in the inter nodes
- 4). It can be changed due to the stimulation of axon
- 5). ATP is essential for its maintenance

21. Parasympathetic stimulation,

- 1).constricts the blood vessels in skin
- 2).dilates the blood vessels in skeletal muscle
- 3).constricts the anal sphincter
- 4).reduces sweating
- 5).constricts the iris and reduces the diameter of pupil

22. Which of the following hormone has the least involvement during stress conditions?

- 1). Cortisol    2). Thyroxin    3). Aldosterone    4). Nor adrenalin    5). ACTH

23. Which of the following statement regarding nitrogen wastes is correct?

- 1). Urea is formed during the deamination of proteins
- 2). Bilirubin and Biliverdin are not nitrogen wastes
- 3). Urea and uric acids are excreted by the liver
- 4). In human creatinine is excreted by more than one organs
- 5). Urea is only excreted by kidneys

Follow the instructions for the questions 24-30.

ABD correct	ACD correct	AB correct	CD correct	Any other responses
1 <sup>st</sup> answer	2 <sup>nd</sup> answer	3 <sup>rd</sup> answer	4 <sup>th</sup> answer	5 <sup>th</sup> Answer

24. Which of the following/s **cannot** be the structure/s to plant, animal and prokaryotic cells?

- A. Cytoskeleton      B. Plasma membrane      C. Peptidoglycan  
D. Peroxisomes      E. Flagella

25. Which of the following event /s occur/s in the glycolysis in a living cell?

- A. ATP is synthesized      B. NADH is produced      C. A four carbon is produced  
D. ATP is utilized      E. CO<sub>2</sub> is liberated

26. Which of the following/s structure/s found in all echinoderms?

- A. Water vascular system, larval stages, and endoskeleton  
B. Coelome, gonadal ducts and tube feet  
C. Tentacles, central disc and pedicellariae  
D. Cloaca, pinnulus and arms  
E. Anus, eye spots and respiratory trees

27. Which of the following statement/s regarding fibers in food is/are correct?

- A. They reduce hungry      B. They induce peristalsis      C. They prevent the gastric disorders  
D. They are needed for metabolism and healthy body      E. They prevent gastritis

28. The following characters found in a Chordate animal.

- ◆ Internal fertilization
- ◆ Horny scales
- ◆ Nitching membrane
- ◆ Major nitrogen waste is uric acid

Which of the following/s can be seen in the above mentioned animal's phylum?

- A. Limbs, cartilage, larval stages  
B. 10 pairs of cranial nerves, four chambered heart, lungs  
C. Three chambered heart, skin without glands, lacks larval stages  
D. Ovovivpariety, egg covered with shell, lungs  
E. Inner and middle ear, lacks teeth, lateral lines

29. Transpiration takes place in a plant body through,

- A. cuticle      B. epidermis      C. stomata      D. lenticels      E. cortex

30. Which of the part/s secrete hormones that regulate/s functioning of human kidneys?

- A. Anterior pituitary, hypothalamus, posterior pituitary  
B. Adrenal cortex, parathyroid gland, hypothalamus  
C. Adrenal medulla, testes, ovary  
D. Anterior pituitary, thymus gland, parathyroid gland  
E. Thyroid gland, pancreas, duodenum.