

GULF SAHODAYA EXAMINATION (SAUDI CHAPTER)

February/March 2021

SUBJECT: BIOLOGY (044) THEORY

CLASS XI

MAXIMUM MARKS 70

DURATION 3 HOURS

General Instructions:

- 1) All questions are compulsory
- 2) The question paper has four sections. Section A, Section B, Section C and Section D. There are 33 questions in the question paper.
- 3) Section - A has 14 questions of 1 mark each and 02 case based questions. Section - B has 9 questions of 2 marks each. Section - C has 5 questions of 3 marks each and Section D has 3 questions of 5 marks each
- 4) There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.
- 5) Wherever necessary, neat and properly labelled diagrams should be drawn.

SECTION A

1. Why are the members of Rhodophyceae called as red algae?
2. What does the word 'virus' mean?
3. Name the epithelium that lines the Fallopian tube.
4. What is the nature of ovary in a hypogynous flower?
5. Why are living organisms classified?
6. Give an example of a unicellular gland.
7. Write the distinguishing feature of dense irregular connective tissue. Where is it found in our body?
8. Define meiosis.
9. What is G_0 (quiescent phase) of cell cycle?
10. Why are hormones of 'Fight and Flight' called so? Which part of adrenal gland secretes them?

11. **ASSERTION:** All living organisms grow.
REASON: Increase in mass and increase in number of individuals are twin characteristics of growth.
- Both assertion and reason are true, and reason is the correct explanation of assertion.
 - Both assertion and reason are true, but reason is not the correct explanation of assertion.
 - Assertion is true but reason is false.
 - Both assertion and reason are false.
12. **ASSERTION:** The flower is the reproductive unit in the angiosperms.
REASON: Calyx and corolla are the accessory organs.
- Both assertion and reason are true, and reason is the correct explanation of assertion.
 - Both assertion and reason are true, but reason is not the correct explanation of assertion.
 - Assertion is true but reason is false.
 - Both assertion and reason are false.
13. **ASSERTION:** Sunlight is essential to the plant for photosynthesis.
REASON: In bright sunlight, small bubbles are formed around the brown parts of the plant.
- Both assertion and reason are true, and reason is the correct explanation of assertion.
 - Both assertion and reason are true, but reason is not the correct explanation of assertion.
 - Assertion is true but reason is false.
 - Both assertion and reason are false.
14. **ASSERTION:** We have two lungs which are covered by a three layered pleura.
REASON: Pleural fluid is present inside the inner pleural membrane.
- Both assertion and reason are true, and reason is the correct explanation of assertion.
 - Both assertion and reason are true, but reason is not the correct explanation of assertion.

- c. Assertion is true but reason is false.
- d. Both assertion and reason are false.

OR

ASSERTION: Parathyroid hormone increases the calcium levels in the blood.

REASON: Parathyroid hormone acts on bones and stimulates the process of bone resorption.

- a. Both assertion and reason are true, and reason is the correct explanation of assertion.
- b. Both assertion and reason are true, but reason is not the correct explanation of assertion.
- c. Assertion is true but reason is false.
- d. Both assertion and reason are false.

15. Read the following and answer any four questions from 15(i) to 15(v) given below.

What makes our planet liveable?

Photosynthesis refers to a set of chemical reactions in which energy from sun changes carbon dioxide and water into glucose and oxygen. Photosynthesis may be the most important chemical reaction on the planet because it releases oxygen and traps carbon. Plants use glucose as a building block to build starch for long-term energy storage and cellulose to build structures.

- (i) Glucose is a simple sugar, yet it is a large molecule compared to carbon dioxide or water. How many molecules of carbon dioxide and water are needed to produce one molecule of glucose?
 - a. 6CO_2 and $6\text{H}_2\text{O}$
 - b. 1CO_2 and $6\text{H}_2\text{O}$

- c. 6CO_2 and $12\text{H}_2\text{O}$
 - d. 1CO_2 and $1\text{H}_2\text{O}$
- (ii) Plants and other photosynthetic organisms perform both sets of reactions, photosynthesis and cellular respiration. What is not true about it
- a. In the day time, most plants take carbon dioxide and release oxygen
 - b. During the day and at night, plants use oxygen to release energy from sugar, and release carbon dioxide.
 - c. Green plants release much more oxygen than they use.
 - d. In plants, these reactions are equally performed and opposite to each other.
- (iii) C₄ or the Hatch and Slack Pathway is a -
- a. Photosynthetic pathway
 - b. Cellular respiration pathway
 - c. A metabolic path for amino acid synthesis
 - d. None of these
- (iv) Sunlight is most harnessed by chlorophyll, which is green. Do the plants with red or purple coloured leaves perform photosynthesis?
- a. Yes, as they have chlorophyll
 - b. Yes, as they have xanthophylls and carotenoids
 - c. No, as they do not have chlorophyll
 - d. No, as they do not have xanthophylls and carotenoids
- (v) Is sun the only source of energy for photosynthesis?
- a. No, plants can use the energy contained in artificial light
 - b. No, plants can use the energy contained in moon light
 - c. Yes, plants cannot use the energy contained in artificial light or moon light
 - d. Both a and b are correct

16. Read the following and answer any four questions from 16(i) to 16(v) given below.

EXCRETION

Excretion is a process in which metabolic waste is eliminated from an organism. In vertebrates this is primarily carried out by the lungs, kidneys and skin.

Aquatic animals usually excrete ammonia directly into the external environment. In terrestrial animals ammonia-like compounds are converted into other nitrogenous materials.

The excreted material may be called ejecta.

(i) The process of release of saliva and digestive enzymes from the body cells is known as-

- a. Excretion
- b. Secretion
- c. Egestion
- d. Elimination

(ii) In unicellular organisms, waste products are discharged outside through-

- a. Surface of the cell
- b. Kidneys
- c. Glands
- d. All of these

(iii) **ASSERTION:** Aquatic animals usually excrete ammonia directly into the external environment.

REASON: This compound has high solubility and there is ample water available for dilution.

- a. Both assertion and reason are correct and reason is the correct explanation.
- b. Both assertion and reason are correct but reason is not the correct explanation.
- c. Assertion is correct but reason is false.
- d. Both assertion and reason are false.

(iv) In terrestrial animals ammonia like compounds are converted into other nitrogenous materials as-

- a. There is less water in the environment

- b. Ammonia itself is toxic
 - c. Both a and b are correct
 - d. Excretion of ammonia is metabolically more expensive.
- (v) Birds excrete their nitrogenous wastes as-
- a. Ammonia
 - b. Amino acid
 - c. Urea
 - d. Uric acid

SECTION B

- 17. Draw a diagram of Funaria showing gametophyte and sporophyte.
- 18. What are the characteristic features of Euglenoids?
- 19. Who introduced Binomial nomenclature? What does the first and second word in a biological name represent? Write the scientific name of Mango.
- 20. Write the peculiar features that you find in parasitic Platyhelminthes.
- 21. Why are lipids included under acid insoluble or macromolecular fraction?

OR

Name and describe the two types of glycocalyx found in bacteria.

- 22. How do metal ions influence the action of enzymes? Give an example.

OR

Who gave the Fluid Mosaic Model of cell membrane? What is the importance of fluid nature of membrane regarding cell function?

- 23. Write the structural formula of 1. Glycine 2. Serine
- 24. Why do Golgi bodies remain in close association with endoplasmic reticulum?
- 25. Name the four factors needed for chemiosmosis to take place.

SECTION C

- 26. Describe the canal system of sponges.

27. What is aestivation? Explain valvate and twisted aestivation with an example of each.
28. Where is the hormone Auxin found in plants? What is its role in plant body? Why do gardeners periodically trim the plants in hedge making?
29. What are the two types of axons? Differentiate between them.

OR

- Interpret the sentence 'Muscle fibre is a syncytium'. Write the characteristic feature of muscle fibre. Why does the myofibril have striated appearance?
30. Explain the mechanism of inspiration with the help of a diagram.

SECTION D

31. Why is mitosis called the equational division? Write the characteristic events that take place during each of the four stages of mitosis. Draw diagrams to show the four stages.

OR

- (A) What is the importance of cristae in mitochondria?
- (B) Why are mitochondria called the power house of the cell?
- (C) How do mitochondria divide?
- (D) Draw a well labelled diagram showing the structure of a mitochondrion.

32. (A) What is the law of limiting factors? How would the rate of photosynthesis be affected if the soil water becomes limiting? Explain.
- (B) Why does the rate of photosynthesis decrease at higher light intensities?
- (C) A certain tree is believed to be releasing oxygen during night time. Do you believe in the truthfulness of this statement? Justify your answer by giving reason.

OR

Trace the main steps of glycolysis. Highlight the reactions which release energy.

33. (A) What is pulmonary circulation? Describe its importance.
(B) Why is the heart called myogenic?
(C) Why are the walls of ventricles more muscular than the walls of atria?

OR

(A) Describe the location of juxta glomerular apparatus in human kidney. Explain its function.

(B) Draw a simple diagram of a human nephron. Label any six parts.
