

## GULF SAHODAYA (SAUDI CHAPTER) EXAMINATION – 2013

Grade : XI  
Subject : BIOLOGY (Code No. 44)

Time : 3 hrs.  
Marks : 70  
Total pages: 4

### SET A

#### *General Instructions:*

1. All questions are compulsory.
2. This question paper consists of four Sections A, B, C and D.  
Section -A contains questions 1 to 8 of 1 mark each,  
Section -B contains questions 9 to 18 carrying 2 marks each,  
Section -C contains questions 19 to 27 carrying 3 marks each,  
Section D contains questions 28 to 30 carrying 5 marks each.
3. There is no overall choice. However, an internal choice has been provided in one question of two marks, one question of three marks and two questions of 5 marks. Attempt only one of the alternatives in such questions.
4. Wherever necessary, the diagrams drawn should be neat and properly labelled.

### SECTION A

1. What are lichens?
2. What are the two components of a scientific name?
3. How is energy available in living systems?
4. What are the component units of calyx and corolla respectively called?
5. What are the products of division of the phellogen in dicot stem?
6. How is Anaphase of mitosis different from Anaphase I of meiosis?
7. In which organisms would you find chromatophores?
8. A plant cell immersed in a solution gets plasmolysed after some time. Comment on the nature of the solution.

### SECTION B

9. Write two distinctive features of the phyla mentioned below :
  - a. Annelida
  - b. Echinodermata
10. What are the effects of manganese toxicity in plants?
11. How are heart attack and cardiac arrest different? How is atherosclerosis caused?

12. Bring out the differences between root and stem on the basis of the following:
  - a. Hair
  - b. Vascular bundles
13. Where in the body of the earthworm are setae located? What is their role ?
14. Name and explain the structure of chromosomes on the basis of the position of centromere.
15. Immune response of older people becomes weak. Name the endocrine gland responsible. Name the hormone secreted by this gland and state its role in maintaining the immune system.
16. Name four physiological processes that take place during the photochemical phase of photosynthesis.

OR

Why does Rubisco act only as a carboxylase in C<sub>4</sub> plants?

17. Explain the terms in brief:
  - a. Apical dominance
  - b. Vernalization
18. What are the *cis* and *trans* face of golgi bodies? Why do golgi bodies remain in close association with the endoplasmic reticulum?

### SECTION C

19. Draw a diagram of the human eye and label its parts.
20. What happens during cyclic photophosphorylation? State two situations in which only cyclic photophosphorylation is seen to occur.
21. Name the types of aestivation seen in petals and write an example of each type.

OR

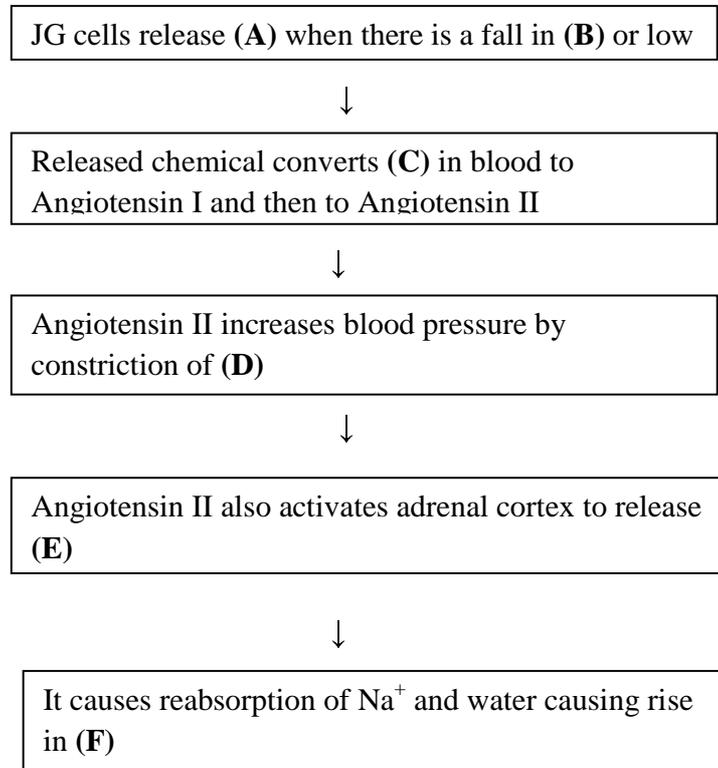
Write the differences between Fabaceae and Solanaceae with respect to the following:

- a) Aestivation
  - b) Androecium
  - c) Fruit
22. What are the scientific terms for the following:
    - a. Phase of cell cycle when proteins and RNA are synthesized.
    - b. The stage of cell division where DNA replicates.
    - c. The exchange of segments between non – sister chromatids.
  23. What are the components of bile juice? What are the two major role it plays in the process of digestion?

24. Answer the following with reference to respiration:

- Name the part of the cell and the process in which pyruvic acid is produced.
- What happens to pyruvic acid when it enters the mitochondrial matrix?

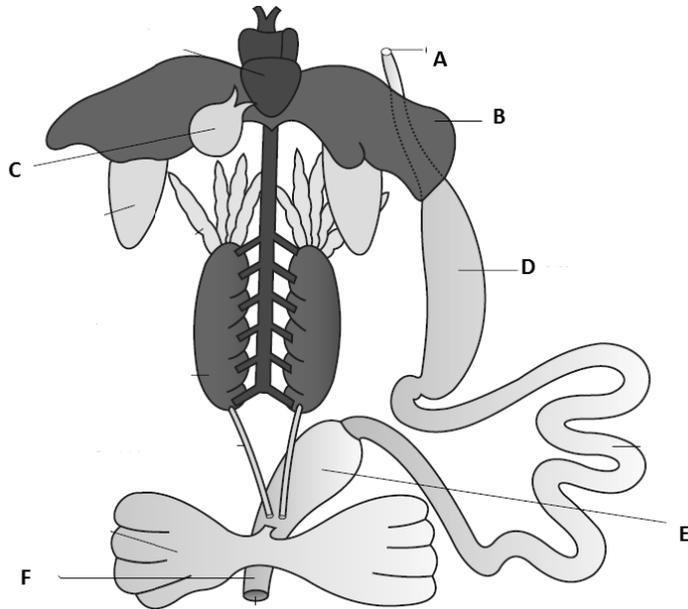
25. Fill in (A) to (F) to complete the flow chart:



26. Fill in the blanks A to F in the following table with the missing details of various algal groups:

Class	Major pigments	Cell wall	Stored food
Chlorophyceae	A	Cellulose	B
Phaeophyceae	Chlorophyll a, c, fucoxanthin	C	D
E	Chlorophyll a, d, phycoerythrin	Cellulose, pectin etc.	F

27. Label A to F in the following figure showing the digestive system of frog:



### SECTION D

28. A) Where does the ETS operate in a cell?  
 B) Explain the role of oxygen and  $F_0-F_1$  complex in ETS.

OR

- A) Why do most ions enter the root by active absorption?  
 B) How do plants regulate the type and quantity of solutes that enter the xylem?

29. Describe the structure of protein molecules and support your answer with diagrams.

OR

- a) Explain the catalytic cycle of enzyme action.  
 b) What are cofactors of enzymes? Name their different kinds.

30. Explain the role of diaphragm and rib cage in the process of inspiration and expiration.  
 John smokes at least ten cigarettes every day and has been in the habit for years. What do you think will be the physiological consequence of his habit? Is John's habit harmful to him alone?