Bhavan's Tripura Vidyamandir

2nd Terminal Examination (2024-2025)

Class:-11 **Subject:-Biology**

Time:-3 Hours Total:- 70 Marks

Name of the student: Roll Sec

General Instructions:

(i) All questions are compulsory.

(ii) The question paper has five sections and 33 questions. All questions are compulsory.

(iii) Section–A has 16 questions of 1 mark each; Section–B has 5 questions of 2 marks each; Section– C has 7 questions of 3 marks each; Section– D has 2 case-based questions of 4 marks each; and Section–E has 3 questions of 5 marks each.

(iv) 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.

(v) Wherever necessary, neat and properly labeled diagrams should be drawn.

SECTION-A

1. Classification of organisms based on evolutionary as well as genetic relationships are Called -
   (a) Biosystematics (b) Phenetics (c) Numerical taxonomy (d) Cladistics
2. In gymnosperms, the ovule is naked because
   (a) Ovary wall is absent (b) Integuments are absent
   (c) Perianth is absent (d) Nucellus is absent
3. In C4 plants, agranal chloroplasts are found in
   (a) Mesophyll cells (b) Epidermal cell chloroplasts of green stem
   (c) Bundle sheath cells (d) Chloroplasts of guard cells
4. Which one of the following is the major difference between mosses and ferns ?
   (a) Ferns lack alternation of generation while mosses show the same.
   (b) Mosses are facultative aerobes while ferns are obligate aerobes.
   (c) Vascular bundles of ferns show xylem vessels while those of mosses lack it.
   (d) Sporophytes of ferns live much longer as compared to the sporophytes of mosses.
5. Atrial natriuretic factor (ANF) is released in response to the increase in blood volume and blood pressure. Which of the followings is not the function of ANF?
   (a) Stimulates aldosterone secretion
   (b) Inhibits the release of rennin from JGA
   (c) Stimulates salt loss in urine
   (d) Inhibits sodium reabsorption from collecting duct
6. The volume of air breathed in and out during normal breathing is called
   (a) Vital capacity (b) Inspiratory reserve volume
   (c) Expiratory reserve volume (d) Tidal volume
7. Which of the following statements is/are not true?

(i) In Urochordata, notochord is present in larval tail.

(ii) In Cephalochordata, notochord extends from head to tail region.

(iii) Branchiostoma belongs to hemichordata.

(iv) Only one class of living members, class Cyclostomata are presents the super class Agnatha

(a) (ii) and (iv) (b) (i), (iii) and (iv) (c) (iii) only (d) (i) and (iv)

8. Which one of the following pairs of chemical substances is correctly categorized?
   (a) Calcitonin and thymosin -Thyroid hormones
   (b) Pepsin and prolactin – Two digestive enzymes secreted in stomach
   (c) Troponin and myosin - Complex proteins in striated muscles
   (d) Secretin and rhodopsin -Polypeptide hormones
9. Metanephric kidneys are found in
   (a) Reptiles only (b) Birds only (c) Mammals only (d) All of these
10. Ankle joint is
   (a) Pivot Joint (b) Ball and socket joint
   (c) Hinge joint (d) Gliding joint
11. Erythroblastosis foetalis occurs when
   (a) Mother is Rh negative and father is Rh positive
   (b) Father is Rh negative and mother is Rh positive
   (c) Both are Rh positive
   (d) Both are Rh negative
12. Sequence of meninges from inner to outside is
   (a) Duramater – Arachnoid –Piamater
   (b) Duramater – Piamater –Arachnoid
   (c) Arachnoid – Duramater -Piamater
   (d) Piamater- Arachnoid –Duramater

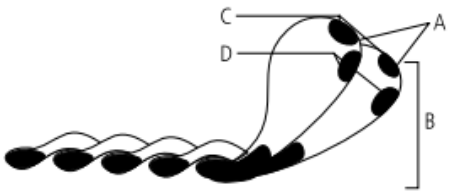
Question No. 13 to 16 consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

A. Both A and R are true and R is the correct explanation of A.
B. Both A and R are true and R is not the correct explanation of A.
C. A is true but R is false.
D. A is False but R is true.

13. Assertion: In a flower the gynoecium occupies the highest position while the other parts are situated below it.
Reason: The ovary in such flowers is said to be inferior.
14. Assertion: Coelenterates are known as Radiata.
Reason: These are bilaterally symmetrical organism.
15. Assertion- Leaves have green colour.
Reason- Green colour plastids/pigments(Chlorophyll) are present in leaves.
16. Assertion: The amino acid glycine comes under the category of nonessential amino acids.
Reason: This is due to the fact that it cannot be synthesised in the body.

SECTION-B

17. Distinguish between simple and compound leaves.
18. Mention the four basic requirements for chemiosmosis to occur.
19. Plant growth substances (PGS) have innumerable practical application.
   Name the PGS you should use to
   (a) Increase yield of sugarcane
   (b) Promote lateral shoot growth
   (c) Cause sprouting of potato tuber
   (d) Inhibit seed germination
20. Label the correct part of the Myosin monomer.



21. If someone receives a blow on the back of neck, what would be the effect on the person's CNS?

OR,

Correct the following statements by replacing the term underlined.

(i) Insulin is a steroid hormone.

(ii) TSH is secreted from the corpus luteum.

(iii) Tetraiodothyronine is an emergency hormone.

(iv) The pineal gland is located on the anteriorpart of the kidney.

SECTION-C

22. Explain briefly the structural levels of proteins.

23. Enlist three points of the phase Pachytene.

24. A process is occurring throughout the day, in 'X' organism. Cells are participating in this process. During this process ATP, CO_2 and water are evolved, It is not a light dependent process.

(a) Name the process.

(b) Is it a catabolic or an anabolic process?

(c) What could be the raw material of this process?

25. Schematically represent double circulation.

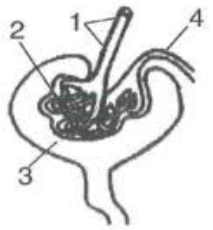
26. What makes the synovial joint freely movable? List the various types of synovial joints.

27. Study the following diagram,

(a) Name the region in the kidney where the above structure is present?

(b) Name the parts labelled 1, 2, 3 and 4.

(c) Name the stages involved in the formation of urine.



28. List the different groups of hormones secreted by the adrenal cortex. Give their chemical nature, a specific region of secretion and one major function of each. What would happen to the animal if adrenal cortex is destroyed?

OR,

Show the notes on respiratory balance sheet.

SECTION-D

Q.no 29 and 30 are case based questions. Each question has subparts with internal choice in one subpart.

29. Radha's father who was a diabetic does not avoid things doctor said to do him in diet. He also feels lazy to go for a walk. One day, his glucose level was checked by his doctor. The doctor advised him to take injections regularly, as he was not able to control his diabetes with diet and medication. He came home and while telling the things to Radha's

mother. Radha (biology student) heard them and interrupted in between. She explained that, doctor has given insulin injections to control his blood glucose level. This may be discontinued, if he will take precautions in his daily routine.

(i) Which endocrine gland and its part is involved in the secretion of insulin ?

(ii) Why doctor preferred him to take insulin injections?

(iii) What precaution he should take to protect himself from such disorder?

OR,

What is hypoglycaemia? (1+1+2)

30. A student observed polluted water bodies. He found green gelatinous organisms which spread the all over the water. He studied some of these organisms under microscope and discussed with his biology teacher.

(i) What are these green gelatinous organisms?

(ii) What is heterocyst?

(iii) Write any two features of the cyanobacteria.

OR,

Write any one similarity between cyanobacteria and plants. (1+1+2)

SECTION-E

31. Where does the non-cyclic phosphorylation take place? Describe this process. Why is this process called so? (4+1)

OR,

Describe the biosynthetic phase with the help of diagram. (3+2)

32. Draw the schematic representation of Kreb's Cycle. Write down its significance.

OR, (4+!)

Which cell division is known as Equitional division. Describe its different stages with diagram. And also mention it's significance. (1+3+1)

33. Explain sliding filament theory of muscle contraction with neat sketches. (3+2)

OR,

Explain the mechanism of generation of action potential and how does it help in conduction of nerve impulse through neurons. (With diagram) (3+2)