PT4/ANNUAL EXAMINATION, 2023-24

BIOLOGY

Time – 3 hrs. **Class – XI** **M.M. – 70**

Name of the student _____ Section ____ Date - 14.02.2024 (Wednesday)

GENERAL INSTRUCTIONS:-

1. **All questions are compulsory.**
2. **The question paper has five sections and 33 questions. All questions are compulsory.**
3. **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.**
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

Q1 In biological terminology, a group of similar organisms which are capable of interbreeding and producing fertile off springs, is called _____.

a) species b) genus c) tribe d) family

Q2 In _____ flowers margin of thalamus grows upward enclosing the ovary completely and getting fused with it.

a) Hypogynous b) Perigynous c) Epigynous d) both B and C

Q3 Plant tissue when stained showed the abundance of hemi-cellulose and pectin in wall of its cells. The tissue represents _____.

a) Sclerenchyma b) Collenchyma c) xylem d) phloem

Q4 Bidders canal is found in _____.

a) testes of frog b) ovary of mammal c) kidney of frog d) kidney of mammal

Q5 A beta-pleated sheet organisation in a polypeptide chain is an example of _____.

a) primary structure b) secondary structure c) tertiary structure d) quaternary structure

Q6 Reaction centre of PS-I is _____ and reaction centre of PS-II is _____.

a) P680, P700 b) P700, P680 c) P800, P600 d) P700, P900

Q7 The end product of glycolysis is _____ .

a) Pyruvic acid b) glucose c) ethyl alcohol d) CO_2

Q8 The end product of oxidative phosphorylation is _____.

a) NADH b) Oxygen c) ADP d) ATP+H_2O

Q9 An irreversible or permanent increase in size, mass or volume of a cell, organ or organism is called as_____.

a) Growth b) Differentiation c) Dedifferentiation d) development

Q10 Artificial ripening of fruits is caused by treatment of _____.

a) IAA b) NAA c) Ethylene d) Kinetin

Q11 In a human being, the number of cranial nerves is _____.

a) 12 pairs b) 6 Pairs c) 20 Pairs d) 10 Pairs

Q12 MSH is secreted by _____.

a) anterior lobe of pituitary b) middle lobe of pituitary

c) posterior lobe of pituitary d) endostyle

Directions: In the following questions, A statement of Assertion (A) is followed by a statement of Reason (R). Mark the correct choice as:

(A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

(B) Both Assertion (A) and Reason (R) are true but Reason (R) is NOT the correct explanation of Assertion (A).

(C) Assertion (A) is true but Reason (R) is false.

(D) Assertion (A) is false but Reason (R) is true.

Q13 **Assertion (A) :** In a flower the gynoecium occupies the highest position while the other parts are situated below it.

Reason (R) : The ovary in such flowers is said to be inferior

Q14 **Assertion (A) :** Mitochondria help in cellular respiration.
Reason (R): Mitochondria have enzymes for dark reaction.

Q15 **Assertion (A) :** There is a decrease in photosynthesis, if the photosynthetic cells are illuminated by light of P680 nm or more wavelength.

Reason (R) : In red drop phenomenon the rate of photosynthesis decreases.

Q16 **Assertion (A) :** Kidneys maintain the osmotic concentration of the blood.

Reason (R) : Kidneys eliminate either hypotonic or hypertonic urine according to the need of the body.

SECTION-B

Q17 Write a note on economic importance of algae.

Q18 Justify the following statements on the basis of external features:
Flower is a modified shoot.

Q19 Find examples where the four daughter cells from meiosis are equal in size and where they are found unequal in size.

Q20 Differentiate between:
Respiration and Combustion

Q21 What is the importance of plasma proteins?

OR

Define vital capacity. What is its significance?

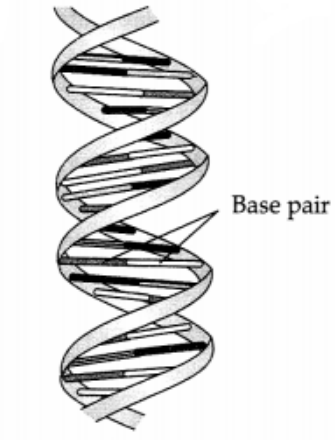
SECTION-C

Q22 Write any 3 characteristic features of Euglenoids?

Q23 What is stomatal apparatus? Explain the structure of stomata with a labelled diagram.

Q24 a) What are the various types of nitrogenous bases found in DNA?

b) What are Purines and Pyrimidines?



Q25 Write any three characteristics of prokaryotic cells?

Q26 Describe briefly –

a) Arithmetic growth

b) Geometric growth

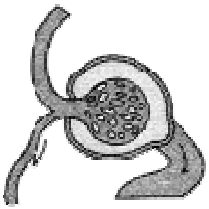
c) Sigmoid growth curve

Q27 Define oxygen dissociation curve. Can you suggest any reason for its sigmoidal pattern?

Q28 Label the parts in the following diagram.

(a) Afferent arteriole,

(b) Bowman's capsule,



OR

(i) Compare the following:

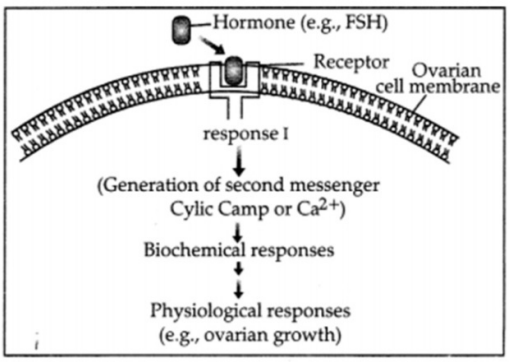
(a) Central neural system (CNS) and Peripheral neural system (PNS).

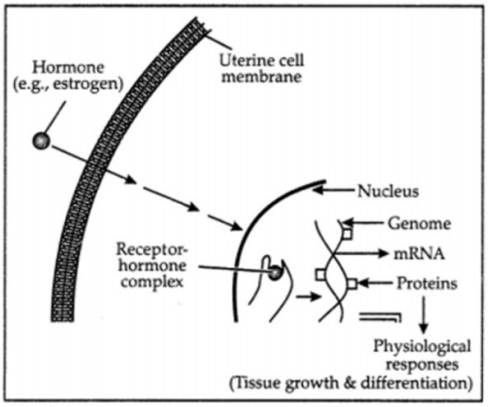
(b) Resting potential and action potential.

(ii) Draw labelled diagram of a Neuron.

SECTION-D

Q29 (a) Identify the following type of mechanisms shown in the diagram (i) and (ii),below





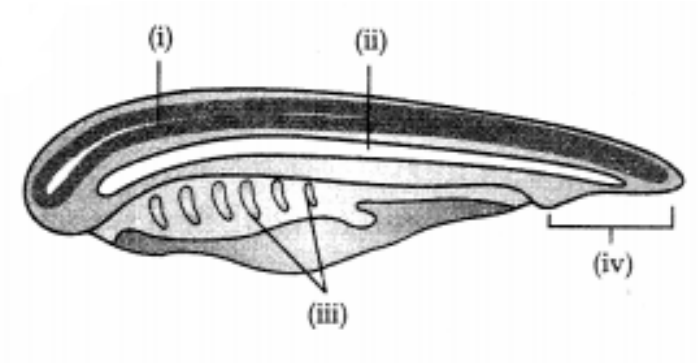
(b) Explain the mechanisms which are illustrated through the given diagram(i) and (ii).

(c) Write other examples which can possess these mechanisms, respectively.

Q30 (a) Give an example of Urochordata and Cephalochordata?

(b) Identify the labelling (i), (ii), (iii), (iv).

(c) What is the position of the heart in chordates?



SECTION-E

Q31 What is a flower? Describe the parts of a typical angiosperm flower.

OR

Draw a neat diagram of digestive system of frog.

Q32 Explain the factors affecting photosynthesis as:-

(a) External Factors.

(b) Internal Factors.

OR

Give the schematic representation of an overall view of Krebs' cycle.

Q33 Draw the diagram of a sarcomere of skeletal muscle showing different regions. Explain sliding filament theory of muscle contraction.

OR

Draw a standard ECG and explain the different segments in it.