College - Kandana

Biology

Term Test May 2023 **Grade 12**

03-05-2023

Select the most suitable answer.

1. Which of the following is a polysaccharide.
   1) Lactose 2) Inulin 3) glycerol 4) NAD^+ 5) t-RNA
2. Group of elements the only contribute for the 4 % of the living matter by body weight.
   1) Ca,N,H,S 2) P,C,K,S 3) Ca,S,N,K 4) Ca,P,K,S 5) K,O,H,S
3. Which of the following become the limitation for the resolution power of light microscope.
   1) Light intensity 2) Wave length of light 3) Amplitude of light 4) coloure of light 5) Speed of light
4. Component of cell membrane that provide rigity yo cell

1) Phospholipids 2) Glycolipids 3) Cholesterol 4) Membrane proteins 5) Carbohydrate chains.

5. Correct about cell junctions.
   1) Connects the cell membrane of adjacent cells
   2) Tight junctions are found between muscle cells
   3) Gap junctions consists of special membrane proteins that surrounds the pore.
   4) Desmosomes connect the plasma membranes of adjacent cells tightly bound by specific proteins.
   5) Anchor junctions mechanically attach the cytoskeletons of adjoining cells by microtubules.
6. Cancer cells differ from normal cell;
   1) It continuously dividemeiotically
   2) It needs growth factors to continue the cell cycle.
   3) Cancer cells have signals that regulate the cell cycle
   4) It has no DNA replication
   5) It has an abnormal cell cycle control system.
7. Select the correct location of cell wall.
   1) Inner to the plasma membrane.
   2) Outer to primary cell wall
   3) Outer to plasma membrane and primary cell wall
   4) Inner to the plasma membrane and the primary cell wall.
   5) Outer to plasma membrane and inner to primary cell wall.
8. Which of the following is not a function of central vacuole.
   1) Storage of water.
   2) Maintain the osmoregulation of the cell.
   3) Storage of chlorophyll pigments.
   4) Provide strength and support.
   5) Storage of water soluble substances including ions and sugars.

9. What is the subcellular component that consider as membrane factories?

1) Rough endoplasmic reticulum 2) Golgi complex. 3) Glyoxisomes.
4) Smooth endoplasmic reticulum 5) Lysosome

10. Correct statement regarding mitosis.

1) Nuclear envelop fragments during the prophase
2) Chromosomes appear with two sister chromatids during the prophase.
3) Nucleoli get disappeared during the pro metaphase.
4) During metaphase, homologous chromosomes arranged randomly at metaphase plate.
5) During anaphase, spindle microtubules get depolymerized.

11. Correct statement about enzyme inhibitors.

1) Most of the competitive inhibitors are irreversible inhibitors.
2) Enzyme inhibitors bind with enzymes reversibly through covalent bonds.
3) ADP is an allosteric inhibitor.
4) Allosteric regulatory molecules bind to the active site of the enzyme.
5) Non – competitive inhibitors bind to a part of the enzyme other than the active site.

12. Proses that occur during G2 phase.

1) DNA wind around histone beads and form chromatin.
2) Synthesis of new cellular organelles.
3) Duplication of centromere.
4) Chromatin get thickened.
5) Building up histone proteins.

13. Which of the following is not shared by all living cells?

1) Plasma membrane 2) DNA 3) ATP 4) 70 S ribosomes in cytosol 5) cytosol

14. Which is not a characteristic of organisms.

1) Metabolism 2) Growth 3) Locomotion 4) Reproduction 5) Adaptation

15. In meiosis ;

1) One complete haploid set of chromosomes accumulate.
2) Sister chromatids are separated at centromere in telophase.
3) One chromosome of each homologous pair moves towards the opposite poles in metaphase II.
4) DNA replicate between meiosis I an meiosis II.
5) Synaptonemal complex is formed in prophase II

Use the given instructions to answer question 16 to 20.

ABD correct	ACD correct	AB correct	CD correct	Other combination
1	2	3	4	5

16. Which of the following are pentose.

A. Ribose B. Ribulose C. Erythrose D. Galactose E. Fructose

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17. What are the properties of water important to provide water surface as a habitat for water skates?
    A. High surface tension
    B. Cohesion and adhesion of water molecules
    C. Polarity
    D. High heat capacity
    E. Expansion upon freezing

18. Sub cellular structures that posses nucleic acids.
    A. Centrioles B. Golgi C. Ribosome D. Mitochondria E. Peroxisome

19. Factors that affect on the rete of enzyme catalytic reaction.
    A. Temperature B. light C. Inhibitors D. pHE. water

20. Structural protein.
    A. Keratin B. Chitin C. Cellulose D. Collagen E. Myosin.

Part - B Structured Essay.

Use the given space to answer the questions. **Time ½ hours.**

1. A)

i. What is meant by natural resource?

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ii. What are the environmental problems that arise due to over exploitation of natural resources?

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iii. Define following terms.

a) Metabolism.

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b) Growth. .....

c) Development. .....

iv. Write the adaptations of following organisms to survive in their environment.

a) Xerophytes. .....

b) Mangroves. .....

c) Camel .....

v. What are the different types of organisms according to their cellular form?

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vi. Name the most abundant elements of living matter.

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B)

i. State characteristic features of water molecule that helps to maintain properties of water.

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ii. What are the major properties of water to maintain life on earth?

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iii. How hydrogen bonds are formed by water molecules?.

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iv. Draw the chemical nature of water molecule.

v. How high specific heat of water helps to maintain life on earth?

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C)

i. Name different types of polymers found in living organism.

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ii. Write the general formulae of carbohydrates. .....

iii. What are the major groups of carbohydrates?

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iv. How simple sugars are classify according to their carbonyl group and give examples.

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2. A)

i. Briefly explain how sucrose molecule is form simple sugars.

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ii. How sucrose chemically differ from other simple sugars?

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iii. Name structural polysaccharides found in plants and give examples.

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iv. Write elements found in lipids. .....

v. What are the different types of fatty acids that contribute to form lipids?

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vi. Briefly explain how above mentioned types differ from one another.

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B)

i. What are the basic features that common to all types of cells?

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ii. What are the parameters of microscope?

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iii. State the suitable microscope to observe followings.

a) Internal structure of cell .....

b) Surface view in three dimensional appearance .....

iv.

a) Who was the first person to describe and record living single celled organisms?

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b) Name the organisms observed / viewed by above mentioned person

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v. Briefly explain the structure of Rough Endoplasmic Reticulum.

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vi. Write two functions of Smooth Endoplasmic Reticulum.

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vii. What is the structural difference between Rough Endoplasmic Reticulum and Smooth Endoplasmic Reticulum?

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C)

i. What are enzymes?

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ii. Name different ways of phosphorylation that occur in living cells.

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iii. What is the main reason for the above different ways of phosphorylation?

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iv. What are the main components of ATP molecule?.

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Essay Question.

Time : 1 hour.

1.

A) Briefly explain main steps of meiosis I occur in animal cell.

B) State the significances of meiosis

2.

A) Write an essay on structural organization of proteins in living organisms.

B) Briefly explain the experimental procedure to identify proteins in school laboratory.