



Grade 12 1<sup>st</sup> Term Test

Part I

Time 3 hours

Answer all questions.

1. An organelle that surrounded by a single membrane .and consists of oxidizing enzymes.  
1. Lysosome      2. Mitochondria      3. Peroxisomes      4. Chloroplasts      5. Glyoxisomes
2. Select the pyrimidine bases found in RNA.  
1. Adenine , Guanine      4. Uracil , Adenine  
2. Thymine , Cytosine      5. Cytosine , Uracil  
3. Guanine , Cytosine
3. Which of the following is not a macro molecule.  
1. Cutin      2. Collagen      3. Cellulose      4. Keratin      5. DNA
4. Select the false statement about collenchyma tissue  
1. Most of the time possess inter cellular spaces are present  
2. Living cells consists of central vacuole  
3. Unevenly thicken cell walls which are absences of lignin  
4. Present in dicot stems ,roots and leaves  
5. Permanent tissue which is not limited to angiosperms
5. Select the correct order of tissues found in the given structures Trachea , ligaments , hypodermis, tendons , intervertebral discs.  
1. Elastic cartilage , white fibrous tissue , adipose tissue , yellow fibrous tissue , bone tissue  
2. Hyaline cartilage , yellow fibrous cartilage , adipose tissue , white fibrous tissue , fibrous cartilage  
3. Hyaline cartilage , yellow fibrous tissue , areolar tissue , elastic cartilage , white fibrous cartilage  
4. Hyaline cartilage , white fibrous tissue , areolar tissue , yellow fibrous tissue , fibrous cartilage  
5. Hyaline cartilage , fibrous cartilage , areolar tissue , yellow fibrous tissue , white fibrous tissue
6. The transmission vesicles are produced by.  
1. Nucleus and Chloroplast.  
2. Lysosome and Golgi complex  
3. Micro bodies and smooth endoplasmic reticulum  
4. Smooth endoplasmic reticulum and rough endoplasmic reticulum  
5. Golgi complex and plasma membrane.

7. Select the most suitable statement about the cell junctions
1. Desmosomes are formed by cohesive proteins which interconnects the cytoskeletons of adjoining cells.
  2. ~~Six~~.....  
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  3. Tight junctions are found between the epidermal cells of the skin
  4. Functionality of plasmodesmata and communication junctions of animal cells are differ from each other.
  5. Anchor junctions prevent the leakage of materials between cells
8. Select the correct statement about prokaryotes.
1. All prokaryotic cells possess 70 s ribosomes.
  2. All prokaryotic cells are absence of cytoskeleton
  3. All prokaryotic cells possess peptidoglycan
  4. All prokaryotes are micro – organisms
  5. All prokaryotic organisms can not fix atmospheric  $N_2$ .
9. A DNA molecule that consists of 11200 hydrogen bonds ,contain 2000 Adenine bases .Find the number of guanine bases in the DNA molecule.
1. 7200          2. 2400          3. 2000          4. 2800          5. 3600
10. Select the false statement .
1. Centrioles are membrane less organelles found only in animal cells and absent in plant cells
  2. Flagella and cilia are formed by arranging nine triplets of micro tubules surrounding the central pair of micro tubules.
  3. Basal bodies are formed by nine triplets arranged in a whirl .
  4. Micro filaments are formed by tightly twisted two series of actin proteins.
  5. Intermediate filaments are mainly consists of vimentin and sometimes it possess keratin
11. What is the first stable product of dark reaction in C3 plants?.
1. Phosphoglyceraldehyde
  2. Oxaloacetate
  3. Pyruvate
  4. Glycerate phosphate
  5. Malate

12. Incorrect statement about photosynthesis.

1. Energy is not consumed for the certain steps of the dark reaction.
2. Reducing power of dark reaction is provided by NADP
3. RuBP is capable of capturing oxygen at low carbon dioxide concentration.
4. Yield is low under high temperature and high light intensity.
5. All ATP , produced in light reaction is used for the dark reaction.

13. Select the false statement about photosynthesis

1. Red and blue light are more efficient in photosynthesis
2. Light reaction takes place in thylakoid membranes
3. Source of O<sub>2</sub> produced in light reaction of photosynthesis is water.
4. Chlorophyll is not the only pigment that involved in photosynthesis .
5. NADPH and O<sub>2</sub> are produced in photosystem II during light reaction.

Answer the question 14 to 15 using the substances.

(A) Sulfonamide

(D) Hg<sup>2+</sup>

(B) Biotin

(E) NAD

(C) Ca<sup>2+</sup>

(F) Haem

14. Select the prosthetic groups out of the given above.

1. C, D
2. A, E
3. B, F
4. A, F
5. B, E

15. Select the molecules that bound to the active site of the enzyme.

1. A
2. B
3. C
4. D
5. E

16. Select the element that do not leads to chlorosis.

1. N
2. P
3. S
4. Mg
5. Fe

17. Select the net product of ATP that produce in glycolysis when one molecule of glucose is completely oxidized.

1. 02
2. 04
3. 08
4. 36
5. 38

18. Select the correct statement about cellular respiration.

1. Pyruvic acid combined with acetyl co -A in the cytoplasm before entering the krebs cycle.
2. Two ATP and six NADPH are produced in krebs cycle
3. Fatty acids and glycerol that are produced by breaking fats enters in to krebs cycle and glycolysis respectively.
4. Amino acids that are produced by break downning proteins enter the series of reaction s in the krebs cycle
5. ATP are produced by reducing the oxidized coenzymes in electron transport chain.

19. Select the incorrect statement about prokaryotes.

1. All are absence of membrane bound organelles
2. Non of their photosynthetic pigments are bound to membranes.
3. None of their flagella are surrounded by membranes
4. None of the prokaryotes possess cilia
5. None of their DNA are packed with histone proteins.

20. Select the correct order of tissues according to the given functions of them in the human body.

- a. .... Filteration .....
- b. .... Secretion .....
- c. .... Absorption .....
- d. .... Reduce friction .....

1. Simple cuboidal epithelium , simple columnar epithelium , simple squamous epithelium , white fibrous tissue
2. Simple columnar epithelium , stratified cuboidal epithelium , simple squamous epithelium , stratified squamous epithelium.
3. Simple columnar epithelium , stratified cuboidal epithelium , simple cuboidal epithelium , stratified transitional epithelium
4. Stratified transitional epithelium , simple columnar epithelium , simple squamous epithelium , white fibrous tissue.
5. Simple squamous epithelium , simple cuboidal epithelium , simple columnar epithelium , stratified epithelium,

21. Substances which are not produced by golgy bodies.

- A. Phospholipids .
- B. Glycolipids
- C. Steroids
- D. Glycol proteins
- E. Nucleo proteins

22. Correct statement about plant tissue.

- A. Xylem vessels are live cells.
- B. Major component of the cell wall of sclerenchyma tissue is lignin
- C. Irregular cellulose thickenings are present in the secondary cell wall of collenchyma cells
- D. Parenchyma tissue mainly does storage function
- E. Dicot plant roots lack collechyma.

23. Select the correct statement about myofibril.

23. Select the correct statement about myofibril.

- A. Muscle fibers with sarcomeres are present only in skeletal muscles
- B. 'A' band consist of myosin filaments only.
- C. 'M' zone consists of myosin filaments only.
- D. 'I' band consist of actin filaments only.
- E. Muscle fibres are surrounded by sarcolemma

24. Correct statement /s about meiosis

- A. Four haploid nuclei are form from one diploid nucleus
- B. Second division of meiosis is equal to mitotic division
- C. Meiosis occurs in all organisms
- D. Pro phase I is the longest phase of meiosis
- E. Daughter cells are identical to their mother cell.

25. Limiting factors of photosynthesis

- A. Light intensity
- B. Relative humidity
- C. CO<sub>2</sub> concentration
- D. Environmental temperature
- E. Speed of wind

**De Mazenod College - Kandana**

**Biology Part II**

**Grade 12 1<sup>st</sup> Term Test**

Answer all questions.

1. A)

i. Write five features of living matter that it differ from non- living.

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ii. Write the five main steps of scientific method.

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iii. Write the main four points of cell theory.

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iv. What do you meant by essential elements ?

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v. Write three trace level elements of plants and write a function of them.

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vi. a) What do you mean by anabolism ?

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b) Write an example for anabolic reaction.

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vii. a) What do you mean by catabolism ?

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b) Write an example for catabolic reaction.

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B)

i. Name the type of electron microscope that is important in studying the internal structure of cells.

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ii. What do you mean by micro bodies ?

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iii. Write four main functions of water in living organisms

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iv. What do you mean by cytoskeleton?

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C)

i. Filling the blanks in the given table.

Substance	Element composition	Fundamental unit	Function
Pectin			
Immunoglobulin			
Chitin			
t-RNA			

ii. What do you meant by macro molecules?

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iii. Name the macro molecules in living organisms.

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2. A)

i. What do you meant by an enzyme ?

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ii. Write 5 factors that affect on the functionality of enzyme

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iii. Plot graphs to explain the effect of above two factors on the rate of the enzymatic reaction.

iv. Name two types of cells in bone tissue.

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v. Name a nucleotide that act as a prosthetic group.

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vi. Give an example for non – competitive irreversible inhibitor.

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B)

i. Write five changes that take place in Pro phase I of meiosis.

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ii. Write two importance of meiosis.

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iii. Write two importance of mitosis.

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iv. Write four basic features of muscle tissue

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v. Write two similarities of parenchyma tissue and collenchyma tissue in plants.

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C)

i. Write the three main steps of aerobic respiration and site of occurrence.

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ii. Name two types of respiratory substrates other than carbohydrates and mention at which point that they enter in to aerobic respiration.

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iii. Write the two methods of anaerobic respiration , final electron acceptor and an example in the given table.

Type of respiration	Final 'e' acceptor	Example

iv. What do you meant by respiratory quotient?

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- v. A student carried out an experiment to find the respiratory quotient using the respirator meter. Water level of two arms of U tube brought to equal level at the beginning. After one hour water level in left arm of the U tube has raised to level  $h_1$  in the set-up with ignition tube of KOH.

After this observation, again he equalized the water level of U tube and removed the ignition tube with KOH. Kept this set-up for one hour and could observe that water level has decreased to the level  $h_2$ .



Write an expression for respiratory quotient using the given diagram.

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ii. Write two major differences between eukaryotic cell and prokaryotic cell.

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iii. Write the Blackmans law of limiting factor.

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iv. What do you mean by action spectrum of photosynthesis.

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v . Write two facts that derive from absorption spectrum of photosynthesis.

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**Essay Questions.**

1. Explain mitotic cell division of an animal cell using cell cycle
2. Explain the function of light in photosynthesis.