

06. Used oxygen in aerobic respiration by organisms is finally contained in,
1. Carbon dioxide 2. Carbohydrate 3. Pyruvic acid
 4. Water 5. Oxaloacetic acid
07. Which of the following is correct regarding biochemical substances and related functions.
1. Deoxyribose sugar - Component of ATP
 2. Cutin - Cell wall of fungi
 3. Insulin - Stored food in "Dahlia" tubers
 4. Wax - Component of Plant
 5. Steroid - Component of Cholesterol in cell wall
08. Which of the following is not a monomer unit of biological molecules.
1. Glucose 2. Fructose 3. Amino acid
 4. Nucleotides 5. Ribose
09. Incorrect statement regarding microscopes is,
1. Heavy metals are used for staining when use of light microscopes
 2. Images of light microscope is able to observe with naked eye
 3. Image colour also same as object's colour.
 4. Only black and white images can be observed under electron microscopes
 5. Images formed from electron microscope unable to observe with naked eye
10. Incorrect statement is,
1. Unicellular organism firstly observed by Anton van Leeuwenhoek
 2. Matthias Schleiden concluded that all plants are made up of cells
 3. Ribosomes are present in all cells
 4. Cell theory was presented only by Schleiden and Schwann
 5. All cells are surrounded by a plasma membrane
11. Which of the following structure function relationship is incorrect
1. Plasma membrane - Semipermeable membrane
 2. Micro-tubules - Made of Cytoskeleton
 3. Lysosome - Stores hydrolytic enzymes
 4. Smooth endoplasmic reticulum - Stores Ca^{+2} ions
 5. Peroxisome - helps to nitrogen metabolism of root hair cells
12. Which of the following is not occur in meiosis
1. Pairing homologous chromosomes
 2. Crossing over in chromosomes
 3. Number of chromosomes are reduced into half
 4. Chromatids move two poles of the cell in meiosis I
 5. Do not form genetical identical cells

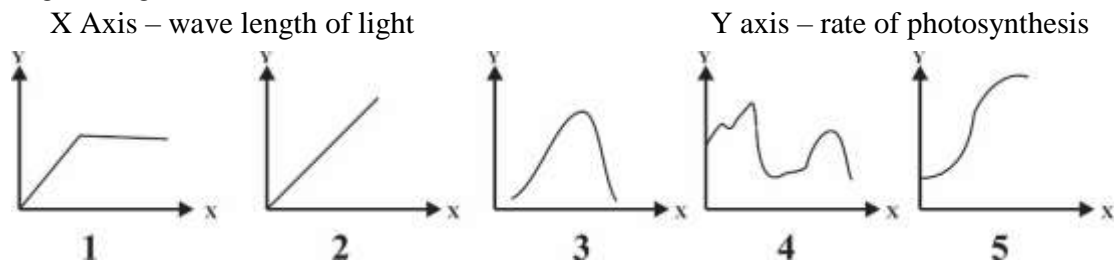
13. Which of the following statement is incorrect regarding enzymes.

1. Enzyme reactions are reversible
2. Enzyme molecules are usually larger than substrate molecules.
3. Enzyme activity is stopped at high temperature
4. Enzyme activity induces the minor changes of active site
5. All enzymes are made of globular proteins.

14. The highest numbers of ATP molecules are produced in.

1. Glycolysis
2. Electron transport system
3. Krebs cycle
4. Light reaction of Photosynthesis
5. Dark reaction of photosynthesis.

15. Which of the following graph shows the correct relationship regarding rate of photosynthesis against wave length of light.



16. Effect of light reaction for photosynthesis is,

1. Production of NADH and ATP
2. Production of NADPH and ATP
3. Production of NAD and ATP
4. Production of FADH_2 and ATP
5. Production of Pyruvic and ATP

17. Early photosynthetic organisms were evolved on the earth.

1. 4.6 Billion years ago
2. 2.7 Billion years ago
3. 1.8 Billion years ago
4. 1.2 Billion years ago
5. 700 Billion years ago

18. Which of the following combination regarding phylum – character is incorrect,

1. Coelenterata/Cnidaria - Diploblastic
2. Annelida - True coelom
3. Platyhelminthes - Having body cavity
4. Arthropoda - Chitinous exoskeleton
5. Echinodermata - Live in marine and fresh water

19. Which of the following feature is appear in firstly evolved cells or organisms on the earth

1. Heterotrophs.
2. Able to grow
3. Aerobic respiration
4. Prokaryotes
5. Able to self replicate

20. Which of the following major character could not be seen in cyanobacteria
1. DNA wound around histone protein
 2. Prokaryotes
 3. Photosynthetic
 4. Most of them are unicellular and few of them are filamentous
 5. Some can fix nitrogen
21. Which of the following is not an international code of binomial nomenclature
1. It should be underlined when printing
 2. Two species of organism cannot have the same name
 3. Name should be made of Latinized words
 4. The 1st letter of the generic name must be capitalized
 5. Each species has a generic name and a specific name
22. When compare *euglena* and *paramecium euglena* have
1. Have one or two flagella
 2. Haven't pellicle
 3. Haven't a oral groove
 4. Have two nucleolus as macro and micro
 5. Have a cell wall and unicellular
23. Which of the following is incorrect regarding diatoms
1. Live in fresh and marine water
 2. Macroscopic
 3. Colour is golden brown
 4. Show vast diversity due to pattern of cell walls
 5. Silica present in cell wall
24. Scientific name of modern man according to the binomial nomenclature
1. *Homo Sapiens sapiens*
 2. *Homo Sapiens Sapiens*
 3. *Homo Sapiens (Linnaeus)*
 4. *Homo sapiens*
 5. *Homo Sapience*
25. Which of the following is mismatched combination
1. Biochemical evaluation - Haldane and Oparin
 2. Introduced kingdom Protista - Ernest Haeckel
 3. Concept of Domain - Robert Whittaker
 4. Theory of natural selection - Russel Wallace
 5. Binomial nomenclature - Linnaeus
26. Who was presented hierarchy of taxa as species, genus, order and class
1. Linnaeus
 2. Aristotle
 3. Theophrastus
 4. Carl Woese
 5. Robert H. Whittaker

27. Which of the following is not a criteria of present system of classification .

1. The sequence of bases of DNA of important genes
2. Base sequence of DNA of mitochondria and chloroplast
3. Base sequence of ribosomal RNA
4. Molecular structure of cellular component
5. Cellular organization

28. Which of the following is correct order of hierarchy of taxa

1. Domain, Kingdom, Phylum, Class, Order, Family, Genus, Species.
2. Domain, Kingdom, Class, Phylum, Order, Family, Genus, Species
3. Domain, Kingdom, Phylum, class, Genus, Order, Family, Species
4. Domain, Phylum, Kingdom, Class, Genus, Order, Family , Species
5. Domain, Phylum, Kingdom, Family, Genus, Order, Species

29. What is a common feature of domain bacteria and domain Archia.

1. Number of RNA polymerase enzymes
2. Starting amino acid of protein synthesis
3. Habitat
4. Cellular organization
5. Cell wall component

30. Major characteristic feature that can be used to identify *Amoeba*

1. Presence of cell wall
2. Without definite shape
3. Without organized nucleus
4. With cilia
5. With eyespots

31. Which of the following is incorrect regarding fungi,

- A. Basidium is produced during sexual reproduction
- B. Motile cells are produced
- C. Basidiospores are produced during sexual reproduction
- D. There is septate filamentous dikaryotic fungi.

Which of the following statements are true regarding phylum – Basidiomycota

- | | | |
|-----------------|---------------------|-------------------|
| 1. A and B only | 2. A,C and D only | 3. A,D and C only |
| 4. A and D only | 5. A,B,C and D only | |

32. Which of the following is incorrect regarding fungi,

1. Zygosporangium is produced by phylum *Zygomycota* when sexual reproduction
2. Member of *Chytridiomycota* are multicellular or unicellular
3. Motile cells are produced by *Chytridiomycota*
4. Conidiospores are produced by phylum *Ascomycota* during sexual reproduction
5. *Basidiospores* are produced by during sexual reproduction.

33. Which of the following plant phylum do not present vascular tissues

1. *Anthocerophyta* 2. *Lycophyta* 3. *Pteriphyta*
4. *Cycadophyta* 5. *Anthophyta*

34. Which of the following is incorrect regarding pogonatum and nephrolepis

<u>Pogonatum</u>	<u>Nephrolepis</u>
1 Gametophyte is dominant	Sporophyte is dominant
2 Vegetative body is modified into stem, leaves, roots	Plant body is modified into stem leaves, roots
3 Have flagellated sperms	Have flagellated sperms
4 Homosporous spores	Homosporous spores
5 Gametophyte is dioecious	Gametophyte is monoecious

35. Which of the following is incorrect regarding guttation

1. Only occur in some plants
2. Favorable activity for plants as transpiration
3. Water remove as liquid form
4. Conditions occur in, high humidity and low temperature
5. Water remove through hydathodes

36. Which of the following is incorrect regarding water transport within the plant.

1. Water potential inversely proportional to the solute potential
2. Water transport by osmosis in transmembrane path way.
3. When the cell is flaccid $\phi_w = \phi_s$
4. When water enter into the cell, water potential goes high and pressure potential goes down
5. Water enters to symplast pathway by osmosis and transport them by diffusion.

37. Endodermis consist of

1. Cork cambium, cork, cells made from cork cambium.
2. Cork cambium, cork and endodermis.
3. Vascular cambium, Secondary phloem, secondary xylem
4. Cork, secondary xylem, secondary phloem
5. Pericycle, Cork cambium, cork

38. Cells that thickened with lining is located

1. Collenchyma and cork
2. Cork and xylem vessels
3. Cork and sclerenchyma
4. Collenchyma and xylem vessels
5. Sclerenchyma and xylem vessels

39. Metabolic energy is not used directly for ,

1. Protein synthesis
2. Cell division
3. Mineral absorption from roots
4. Water absorption from roots
5. Seed germination

40. Which of the following cells that cannot be seen in plant epidermis
1. Root hairs
 2. Guard cells
 3. Bulliform cells
 4. Glandular cells
 5. Sclereids
- For each of the question 41 to 50 one or more of the responses is / are correct. Decide which of the response/ responses is / are correct and then select the correct answer.
- If only A, B, and D are correct - 1
 If only A, C, and D are correct - 2
 If only A and B are correct - 3
 If only C and D are correct - 4
 If only other response/s is/ are correct - 5
41. Which of the following compound / compounds is / are belonging to polymers
- A. Actin
 - B. Lactose
 - C. Chitin
 - D. Amylase
 - E. Suberin
42. Which of the following is true regarding competitive inhibitors of enzyme activity
- A. Temporarily stops the enzyme activity
 - B. Structurally same to substrate
 - C. Do not change three dimensional structure
 - D. Bind to enzyme except to the active site
 - E. There is no enzymatic activity on the inhibitor
43. Which of the following feature / features that can be seen on *Nephrolepis*
- A. Flagellated male gametes
 - B. Independent gametophyte plant
 - C. Homosporous
 - D. Embryo
 - E. Diploid gametophyte plant
44. Which of the following character / characters is/are common to both classes reptilia and aves of phylum chordata
- A. Poikilothermic
 - B. Ovoviviparous
 - C. Internal fertilization
 - D. Laying eggs with a shell
 - E. No teeth in the mouth
45. Which of the following is correct pair regarding element – function
- A. Ca - Component of cell wall
 - B. S - Component of some amino acids
 - C. Zn - Ionic balance within cells
 - D. B - A enzyme activator
 - E. Cl - Important for production of chlorophyll

46. Function / Functions of smooth endoplasmic reticulum
- A. Detoxification
 - B. Digest worn out organelles
 - C. Stores Ca^{2+} ions
 - D. Synthesize lipids
 - E. Gives strength cytoplasm
47. Plants which are having fibrous root system and trimerous flowers
- A. Grasses
 - B. Paddy
 - C. Shoe flowes
 - D. Coconut
 - E. Arecanut
48. Organisms / Organism with leaf like body and ciliated epithelium
- A. *Paramecium*
 - B. Diatom
 - C. *Faciala*
 - D. *Bipalium*
 - E. *Taenia*
49. Which of the following are/ is true regarding *pogonatum*
- A. Sporophyte generation is dominant
 - B. Sporophyte plant do not depend on gametophyte plant
 - C. Fertilization is depend on external water
 - D. Gametophyte plant is diocious
 - E. Heterosporeous spores are produced
50. Organsm/organism without having mobile sexual cells.
- A. *Pogonatum*
 - B. *Nephrolepis*
 - C. *Asperigillus*
 - D. *Nostoc*
 - E. *Selaginella*



Second Term Test - Grade 12 - 2018

Index No :

Biology II

Three - Hours

Important

Part A - Structured Essay. Answer all questions on the paper itself.

Part B - Essay. Answer four questions only. Give clearly labled diagrams where necessary.

Part A - Structured Essay

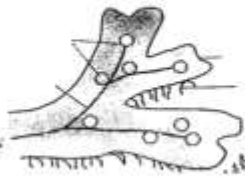
01). A). i. What is meant by natural classification?

.....

.....



A



B



C



D



E

ii. Identify the organisms given in the above diagrams.

A -

B -

C -

D -

E -

iii. Among the organisms given above what is the evolutionary non advance feature seen in the lifecycle of "B"

.....

iv. Write the evolutionary advanced feature seen in "D" and "E" organisms

.....

v. Write four significant features of seedless vascular plants

.....

.....

.....

.....

B). i. What is the living group from which kingdom Plantae evolved?

.....

ii. State four important characteristics which belong to kingdom Plantae but does not belong to the living group you stated above.

.....

.....

.....

.....

iii. What are vascular plants?

.....

.....

iv. a) What is the common conductive cells that all vascular plants have?

.....

b) State 2 structural characteristics of the cell type you stated (iv) (a) above.

.....

v. State five differences between. Monocotyledons and Dicotyledons plants?

Monocotyledons	Dicotyledons
.....
.....
.....
.....
.....
.....
.....
.....
.....

C). i. Diagrams given below are some stages of cell division write the type of cell division and "phase"



A

(a)

(b)



B

(a)

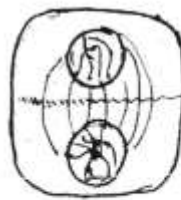
(b)



C

(a)

(b)



D

(a)

(b)



E

(a)

(b)

ii. What picture / pictures indicate the plant cell division

.....

iii. Write two reasons for selecting the above pictures

.....

.....

02). A). i. What is meant by meristems (meristematic tissue)

.....

.....

ii. Write four common characteristics of meristematic tissue

.....

.....

.....

.....

iii. a) Write three main tissue systems of vascular plants

.....

.....

.....

b) Which of the above tissue system specialized for photosynthesis, storage and support?

Name the main types of cells present in above tissue system

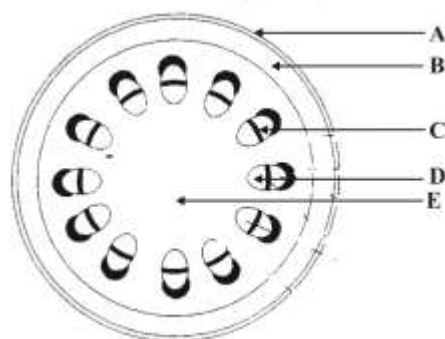
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c) Write main feature of cells mention in (iii) (b)

1.
2.
3.

B). i. Given below is a (Line diagram) cross section of a dicot stem. Name the parts A - E



A B C

D E

ii. Write four differences between dicotyledonous plant stem and monocotyledonous plant stem

Dicot stem

Monocot stem

.....
.....
.....
.....

iii. Write four adaptations of plant leaves for photosynthesis

.....

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.....

.....

C). Two reactions taken place in plants are given below. Answer Questions regarding the reactions.

i. a) $\text{RUBP} + \text{CO}_2 \longrightarrow \text{X}$

b) $\text{RUBP} + \text{O}_2 \longrightarrow \text{Y} + \text{PGA}$

State (a) and (b) reactions given above

(a)

(b)

ii. Name X and Y

X

Y

iii. What are the enzymes which catalyze (a) and (b) reactions given above

(a)

(b)

iv. State a bad effect which happens due to (b) reaction

.....

v. a) Write two adaptations of this plants for preventing bad effect you stated (iv) above

.....

.....

b) Write four future fates of photosynthetic products produced in leaves.

.....

.....

.....

.....

03). A) i. When was the origin of earth consider to be?

.....

ii. a) Name three gases found in the atmosphere at the time of origin of earth

.....

.....

b) Name two incidents which supply energy to synthesis of organic molecules essential for the origin of life

.....

.....

.....

iii. a) According to the biochemical evolution, the emerging force of natural selection could have produced 1st cell through a sequence of four main stages. Name the four main stages.

.....

.....

.....

.....

.....

b) What is the nucleic acid act as early genes and enzymes.

.....

iv. Name the four main geological eons in order

.....

.....

B). i. Life could not exist on the earth without water. Write two factors why water is so important

.....

.....

ii. Write the number of elements essential to continue healthy life and reproduction in plants and in human

In human

In Plants

iii. Some elements are required some certain species of animals only. Name the element required only for vertebrates.

.....

iv. Complete table given below.

	Type of protein	Function	Example
1	Structural protein		
2	Storage		
3	Hormones		
4	Defensive		

C). i. a) Living organisms are classified into three domains. Name them.

.....

b) Name the scientist, proposed three domain classification

.....

ii. Name three criteria used in present system of classification

.....

.....

.....

.....

.....

iii. a) Define the term species ?

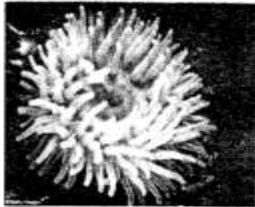
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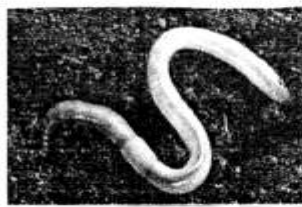
b) Name the five kingdoms according to Whittaker's classification

.....

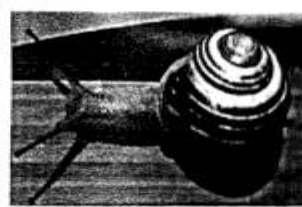
04). A). The question I – III are based on the diagram given below.



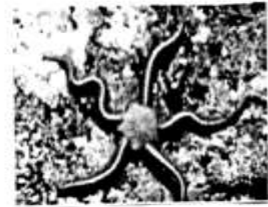
A



B



C



D

i. a) State the kingdom of organisms given above,

.....

b) Write 3 key characteristics of the kingdom stated above

.....

.....

.....

ii. Complete the table given below, regarding the organisms given above.

	Name of the organism	Phylum
A		
B		
C		
D		

iii. Select and write the organism which suit for the characteristics given below by using the pictures indicated above.

a) Diploblastic organism with incomplete alimentary canal

b) Triploblastic coelomated organism with asymmetric body plan

c) Triploblastic organism which possess closed blood circulatory system without heart

.....

B). i. Write two external characteristic to distinguish organisms in chondrichthyes and osteichthyes.

1.

.....

2.

.....

ii. Name the vertebrate group that totally adapt for living in aerial environment.

.....

iii. Write two adaptations of organisms you stated for flying.

.....

.....

.....

.....

iv. State two reasons of intelligence of animals in Mammalia than the other vertebrates.

1.

2.

C). i. What feature of the ATP molecule makes it suitable to function as an energy carrier?

.....

.....

.....

.....

ii. Mention the three ways in which ATP is synthesized in living cell and mention the process of ATP production

Ways of ATP Synthesize	Process
.....
.....
.....

iii. What is an enzyme

.....

.....

.....

.....

iv. a) What are cofactors ?

.....

.....

b) Write the factors effecting rate of enzymatic reaction

.....

.....

Second Term Test - 2018

Grade 12 - Biology - II

Part B Essay

❖ **Answer only four Questions.**

- 05).
 - i. Briefly describe the conditions on earth before life
 - ii. Explain the biochemical evolution.
- 06).
 - i. Describe briefly primary growth in shoot apex.
 - ii. Briefly explain the secondary growth in dicotyledonous plant stem
- 07).
 - i. Describe the process in which soil water molecule is transported to the xylem of the root
 - ii. Define the dicot leaf stomata & describe the structure of it.
- 08).
 - i. Describe the ultrastructure of chloroplast.
 - ii. Explain the mechanism of light dependent reaction.
- 09).
 - i. Define a cell cycle.
 - ii. Briefly describe the events of interphase in eukaryotic cell cycle. Write differences between mitosis and meiosis
- 10). Write Short notes
 - a) Extracellular matrix of animal cell
 - b) Important features of kingdom fungi
 - c) Allosteric regulation of enzymes