BIOLOGY		TIME: 20 MINUTES
GROUP : FIRST	OBJECTIVE	MARKS: 17

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1 11th Class Biology Objective Paper Group 1 DG Khan Board 2024

1 Magnesium of chlorophyll is replaced in Haemoglobin by :
(A) Calcium (B) Potassium (C) Phosphorous (D) Iron ●

2 Vitamin synthesized by the bacteria in --------- the large intestine is :
(A) Vitamin A (B) Vitamin K ● (C) Vitamin C (D) Vitamin D

3 How much air, lungs can hold when they are fully inflated :
(A) 3.5 litres (B) 1.5 litres (C) 5 litres ● (D) 4 litres

4 The uncontrolled production of white blood cells result in :
(A) Asthma (B) Thalassaemia (C) Oedema (D) Leucaemia ●

5 A hormone released by mesophyll cells at high temperature is :
(A) Abscisic acid ● (B) Amino acid (C) HCl (D) H_2SO_4

6 The control of pests by some living organism is called :
(A) Pest control (B) Living control (C) Biological control ● (D) Organismic control

7 The number of carbon atoms in alkanes found in waxes are :
(A) $C_5 - C_{15}$ (B) $C_{15} - C_{25}$ (C) ● $C_{25} - C_{35}$ (D) $C_{35} - C_{45}$

8 If the co-factor is loosely attached to the protein part, the enzyme is known as :
(A) Co-enzyme ● (B) Apoenzyme (C) Holoenzyme (D) Activator

9 Single membrane bound organelle among the following is :
(A) Chloroplast (B) Mitochondria (C) Nucleus (D) Lysosome ●

10 Mumps and measles are caused by :
(A) RNA naked viruses (B) RNA enveloped viruses ●
(C) DNA naked viruses (D) DNA enveloped viruses

11 Important vector in a modern genetic engineering technique is :
(A) Plasmid ● (B) Nucleoid (C) Ribosome (D) Mesosome

12 Based on molecular data, euglenoids are thought to be closely related to :
(A) Brown Algae (B) Green Algae (C) Diatom (D) Zooflagellates ●

13 Cell wall of fungi is made up of :
(A) Pectin (B) Chitin ● (C) Murein (D) Cellulose

14 Male gametophyte has two wings in :
(A) Cycas (B) Pinus ● (C) Taxus (D) Picea

15 Process of shedding off the exoskeleton in arthropods is called :
(A) Ecdysis ● (B) Excretion (C) Lysis (D) Splitting

16 Arthropods which are mostly aquatic are called :
(A) Insects (B) Arachnids ● (C) Crustaceans (D) Myriapods

17 The most abundant Photosynthetic pigment among the chlorophylls is :
(A) Chlorophyll a ● (B) Chlorophyll b (C) Chlorophyll c (D) Chlorophyll d

SECTION – I

QUESTION NO. 2 Write short answers to any Eight (8) of the following 16

i	Why are lipids considered to be high energy compounds ?
ii	In enzymes, what happen when Non – Protein part attaches and detaches from protein part ?
iii	What is the difference between prosthetic group and co-enzyme ?
iv	Differentiate the Irreversible and Reversible inhibitors.
v	What is Histoplasmosis ? How does its infection occurs ?
vi	How do the predator fungi obtain their food ?
vii	How fertilization in Reptilia differ from Amphibia ?
viii	What is metameric segmentation ? In which phylum it is present ?
ix	Why are Echinoderms placed closest to chordates ?
x	How respiration takes place in amphioxus ?
xi	Give molecular formula of chlorophyll " a " and chlorophyll " b ".
xii	Write down importance of ATP.

QUESTION NO. 3 Write short answers to any Eight (8) of the following 16

i	Define Tissue level. Give an example each of animal and plant tissue
ii	What do you know about " Integrated Disease Management " ?
iii	Why centrifugation is necessary for cell fractionation ?
iv	What is endocytosis ? Name its types.
v	Kingdom Protista is defined by exclusion. Why ?
vi	What do you know about choanoflagellates ?
vii	What is the role of diatoms in aquatic ecosystem ?
viii	What is the infamous role of water molds in human history ?
ix	Why a scuba diver breaths pressurized air from cylinders ?
x	Which respiratory pigment has more affinity with oxygen ? Write its function.
xi	Differentiate the open and closed circulatory system. Give an example
xii	What are causes of extracellular Oedema ?

QUESTION NO. 4 Write short answers to any Six (6) of the following 12

i	What are mumps and measles ?
ii	Give economic importance of cyanobacteria.
iii	Compare annulus with stomium.
iv	Why bryophytes are called amphibious plants ?
v	Differentiate the microphylls and megaphylls.
vi	What is protonema ? Give its structure.
vii	Narrate the terms appendix and appendicitis.
viii	Define Dyspepsia. Give its symptoms.
ix	What are Fluid feeders ? Give two examples.

SECTION-II

Note: Attempt any Three questions from this section 8 x 3 = 24

Q.5.(A)	What are inductive and deductive reasoning ? How can a biological problem be solved through biological method ?	4
(B)	What is diving reflex ? Explain in detail.	1+3
Q.6.(A)	What is peptide bond ? Discuss primary and secondary structure of protein.	1+3
(B)	What are Lichens ? Discuss the ecological importance of Lichens and mycorrhizae.	1+3
Q.7.(A)	Write down structure and functions of endoplasmic reticulum and Golgi complex.	2+2
(B)	How would you explain digestion in small intestine ?	3+1
Q.8.(A)	Describe life cycle of Bacteriophages.	4
(B)	Describe at least light functions of Blood.	4
Q.9.(A)	Explain nutrition of bacteria.	4
(B)	Describe the respiratory chain with the help of figure.	3+1

IOLOGY		TIME: 20 MINUTES
GROUP : SECOND	OBJECTIVE	MARKS: 17

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question.

QUESTION NO. 1

1 When CO_2 enters in Calvin cycle, the immediate acceptor of CO_2 is :
(A) 3-phosphoglycerate (B) 1-3 bisphosphoglycerate
(C) Ribulose bisphosphate ● (D) Glyceraldehyde phosphate

2 Zymogen cells of gastric glands secrete :
(A) Hydrochloric acid (B) Mucous (C) Maltose (D) Pepsinogen ●

3 During photorespiration, glycolate diffuses into the membrane bounded organelle is :
(A) Golgi body (B) Peroxisome ● (C) Ribosome (D) Lysosome

4 Cerebral infraction is also known as :
(A) Stroke ● (B) Haemorrhage (C) Heart attack (D) Hypertension

5 The uncontrolled production of white blood cells result in :
(A) Thalassaemia (B) Oedema (C) Leucaemia ● (D) Asthma

6 Triassic, Jurassic and cretaceous are periods of era :
(A) Cenozoic (B) Mesozoic ● (C) Paleozoic (D) Proterozoic

7 Which of the following is not conjugated molecule ?
(A) Polysaccharide ● (B) Glycoprotein (C) Glycolipid (D) Lipoprotein

8 The detachable cofactor of an enzyme is called :
(A) Apoenzyme (B) Co-enzyme (C) Activator ● (D) Prosthetic group

9 Prokaryotic cell wall has :
(A) Cellulose (B) Cutin (C) Lignin (D) Peptidoglycan ●

10 Which one is an insect ?
(A) Cray fish (B) Jelly fish (C) Silver fish ● (D) Star fish

11 The thick walled reproductive cell of cyanobacteria is called :
(A) Heterocyst (B) Akinete ● (C) Hormogonia (D) Trichome

12 Late blight of potato is caused by :
(A) Slime mold (B) Ascomycota (C) Oomycota ● (D) Zygomycota

13 The ecologically important bio-indicator of air pollution :
(A) Mycorrhizae (B) Lichen ● (C) Yeast (D) Bacteria

14 The earliest group of vascular plant is :
(A) Psilopsida ● (B) Pteropsida (C) Lycopsida (D) Sphenopsida

15 The pores from which water leaves the body of sponges are called :
(A) Mouth (B) Anus (C) Ostuim (D) Osculum ●

16 The body cavity of nematoda is :
(A) Coelom (B) Pseudocoelom ● (C) Blastocoel (D) Haemocoel

17 Yellow to orange colour pigments present in chloroplast are :
(A) Chlorophyll 'a' (B) Carotenoids ● (C) Carotenes (D) Xanthophylls

SECTION – I

QUESTION NO. 2 Write short answers to any Eight (8) of the following 16

i	Define metabolism, name its two processes.
ii	How would you differentiate apoenzyme from holoenzyme ?
iii	What is Lock and Key model ? Who proposed it ?
iv	Enlist two conditions that destroy enzyme catalysis by disrupting bonds between atoms in an enzyme.
v	How do fungi resemble animals ?
vi	What are saprobic fungi ? Write their effect on environment.
vii	How does sac like digestive system contrast with tube like digestive system ?
viii	Define metamorphosis. Write its types.
ix	Write economic importance of Sharks.
x	What is syrinx ? Give its function.
xi	How ATP is formed during light dependent reaction ?
xii	What is net production of ATP in glycolysis ?

QUESTION NO. 3 Write short answers to any Eight (8) of the following 16

i	Differentiate chemotherapy and radiotherapy.
ii	Define biodiversity. Give percentage of different groups of organisms on the earth.
iii	What are plastids ? Give names of different types of plastids.
iv	Give any two important functions of Golgi Apparatus.
v	Write down evolutionary significance of Euglenoids.
vi	Give different types of habitats of algae.
vii	What are choanoflagellates ? Give their similarities with sponges.
viii	Give role of micronucleus and macronucleus of ciliates.
ix	Where carbonic anhydrase is present ? Give its role.
x	How does CO_2 affect oxygen carrying capacity of haemoglobin ?
xi	Differentiate symplast and apoplast pathways taken by water to reach xylem tissues.
xii	How can we avoid heart attack ?

QUESTION NO. 4 Write short answers to any Six (6) of the following 12

i	What is Poliomyelitis ? Give its causes.
ii	Write the types of spiral shaped bacteria.
iii	Why Bryophytes are called amphibians of plants ?
iv	What are sori and false indusium?
v	Define Double Fertilization ? Give its importance.
vi	What is protonema ? In which group of plants it is found ?
vii	Define symbiotic nutrition. Give one example.
viii	Compare antiperistalsis and peristalsis.
ix	Write functions of Lacteals.

SECTION-II

Note: Attempt any Three questions from this section 8 x 3 = 24

Q.5.(A)	Compare deductive reasoning with inductive reasoning.	2+2
(B)	How man is responsible for respiratory disorders ? Comment.	4
Q.6.(A)	Discuss the Watson and Crick Model of DNA and draw a labeled diagram.	3+1
(B)	Write different methods of Asexual reproduction in Fungi.	1+1+1+1
Q.7.(A)	What are plastids ? Describe types of plastids and functions.	1+1+2
(B)	Define a parasite. Write a note on parasitic nutrition.	1+3
Q.8.(A)	Write an account on AIDS	1+2+1
(B)	What is Transpiration ? Describe its different types.	4
Q.9.(A)	What are physical methods to control bacteria ?	1x4
(B)	Explain that chloroplasts are the sites of photosynthesis in plants ?	4

PAPER CODE - 6467

11th CLASS – 1st Annual 2023

BIOLOGY
GROUP : FIRST

OBJECTIVE

TIME: 20 MINUTES
MARKS: 17

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1

1	Which is a copper containing protein (A) Cytochromes (B) Pq (C) Pc (D) Fd
2	The painful sensation in the chest is called (A) Piles (B) Pyrosis (C) Antiperistalsis (D) Liver
3	The breakdown of Alveoli is called (A) Tuberculosis (B) Asthma (C) Emphysema (D) Cancer
4	The normal pH of blood is (A) 2.0 (B) 6.5 (C) 6.4 (D) 7.4
5	Which is not a lymphoid mass (A) Spleen (B) Tonsils (C) Thymus (D) Liver
6	The tentative explanation of observation is (A) Deduction (B) Law (C) Theory (D) Hypothesis
7	The % age of water in human brain cell is (A) 65 % (B) 89 % (C) 85 % (D) 79 %
8	Which requires aqueous medium for its activity (A) Proteins (B) Fats (C) Activators (D) Enzymes
9	Intermediate filaments play a role in the maintenance of (A) Cell shape (B) Cell size (C) Cell turgor (D) Cell organization
10	The basic unit of classification is (A) Genus (B) Phylum (C) Class (D) Species
11	Which is anaerobic bacterium ? (A) Spirochete (B) Pseudomonas (C) E. Coli (D) Campylobacter
12	Cell wall of oomycetes contain (A) Cellulose (B) Chitin (C) Peptidoglycan (D) Glycogen
13	Citric acid is obtained from some species of fungi called (A) Agaricus (B) Aspergillus (C) Yeast (D) Penicillium
14	Heterospory is present in (A) Psilopsida (B) Selaginella (C) Lycopodium (D) Sphenopsida
15	Right Aortic arch present in (A) Amphibians (B) Reptiles (C) Birds (D) Mammals
16	The colourless blood of Arthropods is called (A) Haemocyanin (B) Haemolymph (C) Myoglobin (D) Tropomyosin
17	Light behaves as waves and as sort of (A) Radiations (B) Particles (C) Electromagnetics (D) None of these

QUESTION NO. 2 Write short answers of any Eight (8) parts of the following 16

(i)	Define Nucleic Acids , give example
(ii)	Differentiate between activator and prosthetic group
(iii)	What is Induce Fit Model of Enzyme ?
(iv)	Differentiate between competitive and non-competitive Inhibitors
(v)	Compare Fragmentation with budding
(vi)	What is Histoplasmosis ?
(vii)	Give two characters of cyclostomata
(viii)	What is metamorphosis ?
(ix)	How platyhelminthes have adopted themselves parasitic mode of life ?
(x)	What is ecdysis , how it is beneficial for arthropods ?
(xi)	Define chemiosmosis
(xii)	What is lactic acid fermentation ?

QUESTION NO. 3 Write short answers of any Eight (8) parts of the following 16

(i)	What is use of hydroponic culture technique ?
(ii)	Define bioelements , name six elements which form 99 % of total mass in human body
(iii)	Give the function of ribosomes
(iv)	Differentiate between cisternae and cristae
(v)	How algae differ from plants ?
(vi)	Which member of zooflagelles live in gut of termite for digestion of wood ? Discuss
(vii)	What do you know about gaint Ameoba ?
(viii)	Give the role of foraminifera in formation of lime stone deposits
(ix)	Define Ovule
(x)	Describe female cone of pinus
(xi)	Differentiate between apoplast and symplast pathway
(xii)	What is imbibitions ? Give its role

QUESTION NO. 4 Write short answers of any Six (6) parts of the following 12

(i)	What are common names and their disadvantages ?
(ii)	What are amphitrichous bacteria ?
(iii)	Define nutrition
(iv)	How sundews show insectivorous activity ?
(v)	What is botulism ? Give its cause
(vi)	What are parabronchi ?
(vii)	What is the role of nasal cavity in breathing ?
(viii)	How air is better respiratory medium than water ?
(ix)	Where carbonic anhydrase enzyme is present ? Give its function

SECTION-II

Note: Attempt any Three questions from this section 8 x 3 = 24

Q.5 (A)	How vaccination , dry treatment and gene therapy helped in improving human health ?
(B)	Write a detailed account on immunity and its types
Q.6 (A)	Compare tertiary structure of proteins with quaternary structure
(B)	Describe Economic Losses due to fungi
Q.7 (A)	Describe different methods of nutrition in Bacteria
(B)	Describe life cycle of Angiosperms
Q.8 (A)	Explain the five kingdom system proposed by Robert Whittekar 1969
(B)	Describe the Oxidative phosphorylation with the help of graphic representation
Q.9 (A)	Explain the structure and function of Endoplasmic reticulum
(B)	What do you know about the heterotrophic mode of Nutrition in plants give the example of all three

PAPER CODE - 6462

11th CLASS – 1st Annual 2023

TIME: 20 MINUTES
MARKS: 17

BIOLOGY
GROUP : SECOND

OBJECTIVE

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1

1 Which of the following pest is biologically controlled by wasp ?
(A) Mosquito (B) House fly (C) Catterpillar (D) Aphid

2 In Acylglycerol , fatty acids and alcohol are linked to each other by
(A) Ester bond (B) Peptidic bond (C) Glycosidic bond (D) Hydrogen bond

3 An inhibitor which may physically block the active site of enzyme is called
(A) Reversible (B) Competitive (C) Non-competitive (D) Irreversible

4 Which of the following organelle contains the highest concentration of RNA ?
(A) SER (B) Nucleolus (C) Centriole (D) Cytoskeleton

5 Which of these are found in all viruses ?
(A) Envelope (B) Nucleic Acid (C) DNA and RNA (D) Proteins and Nucleic Acid

6 Cyanobacteria unlike other photosynthetic bacteria do
(A) Not give off oxygen (B) Not have chlorophyll (C) Give off oxygen (D) Not have cell wall

7 Which algal group is mismatched ?
(A) Brown Algae – Include kelps (B) Diatoms – Major producers
(C) Dinoflagellates – Two part of shell (D) Green Algae – Close relatives of land plant

8 Following is associated with sexual reproduction in Fungi
(A) Conidia (B) Basidiospores (C) Budding (D) Fragmentation

9 Gametophyte in bryophyte is
(A) Haploid (B) Triploid (C) Diploid (D) Tetraploid

10 Which of the following is included in grade radiata ?
(A) Nematodes (B) Flat worms (C) Cnidaria (D) Arthropods

11 The animals on border line between aquatic and true terrestrial animals are
(A) Amphibia (B) Fishes (C) Birds (D) Mammals

12 Clorophyll is soluble in
(A) Organic solvent (B) Water (C) Water and organic solvent (D) Not in any solvent

13 During dark reactions , highly unstable six carbon compound is derived from
(A) CO_2 only (B) RUBP only (C) RUBP + CO_2 + PEP (D) RUBP + CO_2

14 Pepsinogen is activated to pepsin by
(A) HCl (B) Active pepsin + HCl (C) Active secretin (D) Active pepsin

15 Asthma is associated with severe paroxysm of difficult
(A) Sleeping (B) Walking (C) Breathing (D) Sneezing

16 Lymph returns ..... to blood
(A) Interstial fluid (B) Oxygen (C) White blood cells (D) CO_2

17 Snake bite is treated with which type of immunization
(A) Active (B) Humoral (C) Cell mediated (D) Passive

BIOLOGY | SUBJECTIVE | TIME : 2.40 HOURS

GROUP : SECOND | SECTION-I | MARKS : 68

QUESTION NO. 2 Write short answers of any Eight (8) parts of the following 16

(i)	Differentiate between nucleotide and nucleoside
(ii)	How does high temperature affects enzyme action ?
(iii)	Define inhibitors. Give examples
(iv)	What is prosthetic group ?
(v)	How would you differentiate between rust and smut ?
(vi)	Define mycorrhizae
(vii)	Write down two characters of deuterostomes
(viii)	Differentiate between coelomate and pseudocoelomate
(ix)	Give economic importance of shark
(x)	What is madreporite ? Give its functions
(xi)	Define compensation point
(xii)	Differentiate between action and absorption spectra

QUESTION NO. 3 Write short answers of any Eight (8) parts of the following 16

(i)	What is biological control , give its example
(ii)	Define biomes , how can we name them
(iii)	Write two function of cytoplasm
(iv)	Why mitochondria are power house of the cell ?
(v)	What are Giant Amoeba ? Also write its scientific name
(vi)	How slime molds reproduce ?
(vii)	How algae differ from fungi ?
(viii)	What are red tides ? How these are formed ?
(ix)	Define embryo sac , how it develops ?
(x)	What is fern prothallus ? Give its characteristics
(xi)	Write proteins of plasma with their function
(xii)	What is blue baby , write its one cause

QUESTION NO. 4 Write short answers of any Six (6) parts of the following 12

(i)	Write down the two rule of binomial nomenclature
(ii)	What are Akinetes ? Give their function
(iii)	Define Pyrosis. What are its causes ?
(iv)	What is the composition of saliva ?
(v)	What is macrophagous feeding ? Give its example
(vi)	How gaseous exchange occurs in birds at parabronchi ?
(vii)	What is meant by Residual volume of lungs ? Give residual volume of lungs in man
(viii)	Give symptoms of Emphysema
(ix)	What is pulmonary tuberculosis ? Give its causes

SECTION-II

Note: Attempt any Three questions from this section 8 x 3 = 24

Q.5 (A)	How somatic and embryonic cells are used to make clones ? Write advantages and disadvantages of cloning
(B)	Explain circulatory system of earth worm
Q.6 (A)	Discuss the structure and functions of plasma membrane
(B)	Discuss the life cycle of *Ustilago tritici* with suitable diagram
Q.7 (A)	Give different groups of bacteria on the basis of pattern of flagella
(B)	How seed evolved , describe different steps of evolution of seed
Q.8 (A)	Define binomial nomenclature and give its rules , why it is required ?
(B)	Explain Krebs cycle with the help of diagram
Q.9 (A)	Write down functions of plasma membrane
(B)	Describe digestion of food in Cockroach

PAPER CODE - 6461

11th CLASS – 12022

BIOLOGY
GROUP : FIRST

OBJECTIVE

TIME: 20 MINUTES
MARKS: 17

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1

1 The Devonian period started about ..... years ago
(A) 300 Million (B) 350 Million (C) 400 Million (D) 440 Million

2 All the amino acids contain an amino group and a carboxylic group attached to the same
(A) Oxygen atom (B) Nitrogen atom (C) Hydrogen atom (D) Carbon atom

3 The rate of enzyme reaction becomes double for each ..... rise in temperature
(A) 10 °C (B) 15 °C (C) 20 °C (D) 25 °C

4 The nucleolus synthesize and store
(A) tRNA (B) rRNA (C) mRNA (D) DNA

5 Phylum includes related
(A) Families (B) Orders (C) Classes (D) Genera

6 The example of micro aerophilic bacterium
(A) Pseudomonas (B) Spirochete (C) E.Coli (D) Compylobacter

7 The tests of Foraminiferans have beautiful
(A) Geometric pattern (B) Algebra pattern (C) Pattern (D) Parabolic pattern

8 The mushrooms whose gills glow in the dark
(A) Amanita (B) Omphalotus (C) Agaricus (D) Amphalotus

9 The placentation of potato family is
(A) Basal (B) Free centeral (C) Axile (D) Marginal

10 A leathery shelled egg with massive yolk is
(A) An-amniotic egg (B) Amniotic egg (C) Shelled egg (D) Yolked egg

11 Which one is not the member of class Reptilia ?
(A) Lizard (B) Snake (C) Salamander (D) Tautra

12 Which of the following does not occur during Calvin Cycle ?
(A) Carbon fixation (B) Reduction (C) Regeneration of Rubisco (D) Release of O_2

13 How much energy is released due to breaking of the terminal phosphate of ATP ?
(A) 7.3 K Cal (B) 73 K Cal (C) 730 K Cal (D) 0.73 K Cal

14 All insectivorous plants are true
(A) Heterotrophs (B) Autotrophs (C) Parasitic (D) Saprophyte

15 The floor of chest cavity is
(A) Pleura (B) Ribs (C) Diaphragm (D) Floor

16 What happens when the guard cells are turgid ?
(A) Stoma open (B) Stoma closed (C) No effect on stoma (D) Sugar level drop

17 From where the red blood cells are formed in a person at the age of 35
(A) Liver (B) Spleen (C) Bone marrow (D) Stem cells in bone marrow

BIOLOGY **SUBJECTIVE** **TIME : 2.40 HOURS**

GROUP : FIRST **SECTION-I** **MARKS : 68**

QUESTION NO. 2 Write short answers of any Eight (8) parts of the following **16**

(i)	Why haemoglobin is considered a protein having quaternary structure ?
(ii)	Why optimum pH is necessary for proper functioning of enzymes ?
(iii)	Why some enzymes are produced in their inactive form ?
(iv)	Why changes in enzyme structure are necessary for catalysis ?
(v)	What is para sexuality ?
(vi)	Why rust and smut are called so ?
(vii)	What are deuterostomes ?
(viii)	What are gemmules ?
(ix)	What is infestation ?
(x)	Name the bones present in human ear
(xi)	What is action spectrum ?
(xii)	What is oxidative phosphorylation ?

QUESTION NO. 3 Write short answers of any Eight (8) parts of the following **16**

(i)	Define the term hypothesis
(ii)	What is meant by integrated disease management ?
(iii)	Why plasma membrane is called differentially permeable membrane ?
(iv)	Why is mitochondria considered as a power house of the cell ?
(v)	What are basis of diversity in protista ?
(vi)	Why Euglena is difficult to classify ?
(vii)	Why body of Algae is called thallus ?
(viii)	Write down the symptoms of malaria
(ix)	Define ovule
(x)	Write three characteristics of Bryophytes
(xi)	What do you mean by plasmodesmata ?
(xii)	Differentiate between thrombus and embolus

QUESTION NO. 4 Write short answers of any Six (6) parts of the following **12**

(i)	Write two rules of binomial nomenclature
(ii)	Differentiate between capsule and slime
(iii)	Write the names and functions of any two pancreatic enzymes
(iv)	Differentiate between absorption and assimilation of food
(v)	What is heart burn and its causes ?
(vi)	What are parabronchi and their role ?
(vii)	Why the severe contraction of bronchioles occur in asthma ?
(viii)	Write two adaptations of gills as a site for exchange
(ix)	How O_2 in the air reaches capillaries surrounding alveoli in the lungs ?

SECTION-II

Note: Attempt any Three questions from this section **8 x 3 = 24**

Q.5 (A) How genitically identical organisms can be produced by asexual method ? Explain
(B) Describe how influx of K^+ ions is helpful for opening and closing of stomata ?

Q.6 (A) Explain primary and secondary structure of DNA
(B) Explain different economic losses due to fungi

Q.7 (A) Why antibiotics are considered beneficial as well as harmful for human ?
(B) How megaphylls evoloved ? Discuss their evolution in detail with the help of diagram

Q.8 (A) Draw infectious life cycle of HIV. Give its labeling
(B) Discuss water and photosynthesis relation with the help of Niel's Hypothesis

Q.9 (A) Explain structure and functions of mitochondria
(B) Give digestion of food in cockroach

PAPER CODE - 6462

11th CLASS – 12022

BIOLOGY
GROUP : SECOND

OBJECTIVE

TIME: 20 MINUTES
MARKS: 17

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1

1 Percentage of O_2 in biomass of man
(A) 18 % (B) 10% (C) 65 % (D) 50 %

2 80 % of the total RNA in the cell is
(A) m RNA (B) r RNA (C) t RNA (D) mi RNA

3 For enzymes of human body , optimum temperature is
(A) 30 °C (B) 25 °C (C) 45 °C (D) 37 °C

4 Major component of primary wall is
(A) Cellulose (B) Lignin (C) Pectin (D) Silica

5 Number of capsomeres in the capsid of adeno virus is
(A) 152 (B) 252 (C) 162 (D) 262

6 E. Coli is an example of
(A) Bacilli (B) Cocci (C) Spirochete (D) Spiral

7 Cause of African sleeping sickness is
(A) Trichonympha (B) Trypanosoma (C) Amoeba (D) Paramecium

8 Yeasts belong to group
(A) Zygomycota (B) Basidiomycota (C) Ascomycota (D) Deuteromycota

9 Which of the following are considered as amphibians of the plants ?
(A) Ferns (B) Gymnosperms (C) Angiosperms (D) Bryophytes

10 Blood of *Anodonta* bears
(A) Myoglobin (B) Haemoglobin (C) Bilirubin (D) Haemocyanin

11 Kangroo has abdominal pouch the marsupium where they rear their young ones , belong to subclass
(A) Prototheria (B) Metatheria (C) Eutheria (D) Myriapoda

12 In anaerobic respiration , pyruvic acid is not oxidized and turns into
(A) Ethane (B) Methane (C) Methyle alcohol (D) Ethyle alcohol

13 Which of the following is not an accessory pigment ?
(A) Chlorophyll a (B) Chlorophyll b (C) Carotene (D) Xanthophyll

14 Utilization of the products of digestion for production of energy or synthesis of cellular material is known as
(A) Ingestion (B) Digestion (C) Assimilation (D) Absorption

15 Respiratory pigment present in muscles is
(A) Haemoglobin (B) Myoglobin (C) Myofibril (D) Bilirubin

16 Which of the following is mismatched about RBC ?
(A) Haemoglobin (B) Bone marrow (C) Transport of O_2 (D) Fibrinogen

17 Which of the following is irrelevant for heart of amphibian ?
(A) Right atrium (B) Right ventricle (C) Truncus arteriosis (D) Sinus venosus

BIOLOGY | **SUBJECTIVE** | **TIME : 2.40 HOURS**

GROUP : SECOND | **SECTION-I** | **MARKS : 68**

QUESTION NO. 2 Write short answers of any Eight (8) parts of the following **16**

(i)	How the structure of Lecithin molecule is suitable for it to become part of cell membrane ?
(ii)	The powerful enzyme , pepsin is produced in inactive form pepsinogen , why ?
(iii)	For enzyme activity why optimum pH is necessary ?
(iv)	What happens if non competitive inhibitor combines with enzyme ?
(v)	What are toadstools ? Give example
(vi)	Write down two similarities between fungi and plants
(vii)	What do you know about nematocysts ?
(viii)	What is swim bladder ?
(ix)	How insects are beneficial to humans ?
(x)	Define marsupium
(xi)	Define chemiosmosis
(xii)	What is alcoholic fermentation ?

QUESTION NO. 3 Write short answers of any Eight (8) parts of the following **16**

(i)	What is hydroponic culture technique ? Give its applications
(ii)	What is parasitology ?
(iii)	By which disease the liver and muscles are filled with glycogen ? Write causes of that disease
(iv)	Why peroxisome is named peroxisome ? Write its functions in cell
(v)	Which mold had played infamous role in Irish famine ? Write structure of that water mold
(vi)	How lime stone deposits are formed in the bottom of ocean ?
(vii)	How does slime mold reproduce ?
(viii)	How green algae differ from plants ?
(ix)	Write scientific names of four plants belonging to family solanaceae
(x)	Why sphenopsida are called arthrophytes ?
(xi)	Why body cavity of Cockroach is known as haemocoel ?
(xii)	Compare plasmolysis with deplasmolysis

QUESTION NO. 4 Write short answers of any Six (6) parts of the following **12**

(i)	What are prions ?
(ii)	Differentiate between micro aerophelic and facultative bacteria
(iii)	How leguminous plants fix nitrogen ?
(iv)	Why tubular digestive system is better than sac like digestive system ?
(v)	Write down composition of gastric juice and how its secretion is regulated ?
(vi)	Why respiratory distress syndrome is common in infant with gestation period less than 7 months ?
(vii)	Differentiate between pleura and diaphragm
(viii)	What changes occur in chest cavity of man during inspiration ?
(ix)	Why smoking in young adults is the most potential threat of lungs cancer ?

SECTION-II

Note: Attempt any Three questions from this section **8 x 3 = 24**

Q.5 (A) Why organelles and cell level of organization is important for life along with molecular level ?
(B) How cardiac cycle works in Man ? Give its various stages and its regulation

Q.6 (A) Describe the importance of water for life
(B) What are the various economic losses due to fungi ?

Q.7 (A) Write down the characteristics and economic importance of cyanobacteria
(B) Discuss different evolutionary steps in evolution of megaphyll

Q.8 (A) Write a note on the history of two to five kingdom system
(B) Explain the phenomenon of non-cyclic phosphorylation

Q.9 (A) Compare prokaryotic cell with that of eukaryotic cell
(B) Discuss digestion in stomach of man

PAPER CODE - 6461

11th CLASS – 12021

BIOLOGY
GROUP : FIRST

OBJECTIVE

TIME: 20 MINUTES
MARKS: 17

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1

1 The study of fossils is called
(A) Histology (B) Genetics (C) Palaeontology (D) Morphology

2 Haemoglobin molecule exhibits which structural organization
(A) Primary structure (B) Secondary structure (C) Tertiary structure (D) Quaternary structure

3 Enzymes important in photosynthesis are found in
(A) Chloroplast (B) Mitochondria (C) Nucleus (D) Vacuole

4 Cyclosis and amoeboid movements are because of
(A) Microtubules (B) Microfilaments (C) Intermediate filaments (D) None of these

5 Amoeba belongs to kingdom
(A) Protista (B) Plantae (C) Animalia (D) Fungi

6 A bacterium without any flagellum is called
(A) Peritrichous (B) Lophotrichous (C) Atrichous (D) Monotrichous

7 Based on molecular data Euglenoids are thought to be closely related to
(A) Brown algae (B) Green algae (C) Diatoms (D) Zooflagellates

8 Unicellular fungi which is non hyphal is
(A) Yeast (B) Mushroom (C) Alternaria (D) Penicillium

9 How many years before first complete seed appeared ?
(A) 350 million year ago (B) 365 million year ago (C) 300 million year ago (D) 370 million year ago

10 A free living flatworm with ciliated outer surface is
(A) Round worm (B) Pin worm (C) Planaria (D) Coral

11 The insects that move in large number and cause damage to standing crops is
(A) Fleas (B) Bugs (C) Grasshopper (D) Locusts

12 Yellow to orange colour pigments present in chloroplast are
(A) Carotenoids (B) Xanthophylls (C) Carotenes (D) Chlorophyll b

13 Glycolysis takes place in
(A) Cytosol (B) Mitochondria (C) Nucleus (D) Vacuole

14 Carbohydrate digesting enzyme amylopsin digest starch into
(A) Lactose (B) Sucrose (C) Maltose (D) Fructose

15 Iron containing protein pigment present in muscle fibre is
(A) Haemoglobin (B) Myoglobin (C) Haemocyanin (D) Phycobilin

16 Which type of white blood cell stays 10 to 20 hours in blood then become macrophages ?
(A) Monocyte (B) Neutrophil (C) Basophil (D) Eosinophil

17 The heart of cockroach has how many chambers ?
(A) 11 (B) 12 (C) 13 (D) 14

BIOLOGY
GROUP : FIRST

11th CLASS – 12021
SUBJECTIVE
SECTION-I

TIME : 2.40 HOURS
MARKS : 68

QUESTION NO. 2 Write short answers of any Eight (8) parts of the following **16**

(1) Differentiate between anabolic and catabolic reaction
(2) Define cofactor and write down its roles
(3) Define Induce Fit Model of enzyme catalysis and who proposed it ?
(4) Define inhibitors and give two examples
(5) Differentiate between endo and ectomycorrhizae
(6) Define ergotism
(7) Write down two characteristics of chordata
(8) What are gemmules ?
(9) Write down two adaptations for parasitic mode of life in Platyhelminthes
(10) What is radula and in which phylum it is present ?
(11) Differentiate between chlorophyll a and chlorophyll b by their molecular formula
(12) What is alcoholic fermentation ?

QUESTION NO. 3 Write short answers of any Eight (8) parts of the following **16**

(1) Define deductive reasoning with example
(2) What is Pasteurization ?
(3) Differentiate between Phagocytosis and Pinocytosis
(4) What is Cytosol ?
(5) What are choanoflagellates ?
(6) What is meant by pellicle ?
(7) What are Euglenoids ?
(8) Give importance of Algae
(9) Define double fertilization
(10) Write down any two differences between monocot and dicot
(11) Define pressure flow theory
(12) What is cell mediated response ?

QUESTION NO. 4 Write short answers of any Six (6) parts of the following **12**

(1) What is Herpes simplex ?
(2) What are misuse of antibiotic ? Give example
(3) What are the causes of Jaundice and Gall-stones in man ?
(4) Write the composition of saliva in man
(5) Write Parasitic Nutrition in plants
(6) What is the composition of inhaled and exhaled air , in breathing
(7) Define carcinoma. Give its causes
(8) Why the larynx is called Voice-Box ?
(9) Write Mechanism of inspiration in man

SECTION-II

Note: Attempt any Three questions from this section **8 x 3 = 24**

Q.5 (A) Describe biological method to solve a biological problem
(B) Describe Cohesion Tension theory for transport of water

Q.6 (A) Describe the primary and secondary structure of protein
(B) Write a note on economic losses due to fungi

Q.7 (A) Describe various physical and chemical methods to control bacteria
(B) Discuss at least four steps for the evolution of seed habit

Q.8 (A) Give labelled sketch of infection cycle of HIV
(B) Describe non-cyclic photophosphorylation

Q.9 (A) Write a complete note on lysosome. Explain its phagocytic role with the help of diagram
(B) Discuss the absorption of food in small intestine

PAPER CODE - 6468

11th CLASS – 12021

BIOLOGY
GROUP : SECOND

OBJECTIVE

TIME: 20 MINUTES
MARKS: 17

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1

1	Excretory organs present in Annelids are (A) Nephridia (B) Flame cell (C) Malpighian tubules (D) Kidney
2	The cartilaginous fishes have scales (A) Cycloid (B) Ganoid (C) Placoid (D) Ctenoid
3	Formula of lactic acid is (A) $C_3H_6O_3$ (B) $C_3H_4O_3$ (C) $C_3H_5O_3$ (D) C_3H_5OH
4	Which human organ is protected by carotenoids ? (A) Skin (B) Liver (C) Eye (D) Brain
5	pH of fresh saliva is (A) 6 (B) 7 (C) 8 (D) 9
6	Diameter of bronchiole is (A) 1 mm (B) 1 cm (C) 1 dm (D) 1 m
7	Guttation occurs in plants through (A) Lenticels (B) Hydathode (C) Cuticle (D) Stomata
8	Lymph vessels empty in (A) Arteries (B) Arteriole (C) Capillaries (D) Vein
9	The study of tissues is called (A) Morphology (B) Anatomy (C) Physiology (D) Histology
10	Lipid molecule store double amount of energy as compared to same amount of carbohydrate due to high proportion of (A) C – N bond (B) C – H bond (C) C – O bond (D) C – C bond
11	Reversible inhibitors form weak linkage with (A) Substrate (B) Product (C) Enzyme (D) Reactant
12	The number of pores in nuclear membrane of erythrocyte is (A) 03 or 04 (B) 02 or 03 (C) 05 or 06 (D) 30,000
13	Small pox is caused by (A) Bacteria (B) Virus (C) Protozoan (D) Fungi
14	The smallest bacteria is (A) Mycoplasma (B) E. Coli (C) Pseudomonas (D) Clostridium
15	The vector in sleeping sickness disease is (A) House fly (B) Tsetse fly (C) Fruit fly (D) Butter fly
16	The example of soil dwelling carnivorus fungus is (A) Pleurotus (B) Penicillium (C) Arthrobotrys (D) Armillaria
17	Bryophytes are generally believed to have evolved from (A) Brown algae (B) Red algae (C) Golden algae (D) Green algae

11th CLASS – 12021

BIOLOGY | **SUBJECTIVE** | **TIME : 2.40 HOURS**

GROUP : SECOND | **SECTION-I** | **MARKS : 68**

QUESTION NO. 2 Write short answers of any Eight (8) parts of the following **16**

(1) Differentiate between nucleotide and nucleoside
(2) Differentiate between prosthetic group and coenzyme
(3) Define Lock and Key model of catalysis and who proposed it ?
(4) What are non competitive inhibitors ?
(5) Differentiate between asci and ascocarps
(6) What is histopalsmosis ?
(7) Differentiate between polyps and medusae
(8) Define metamorphosis
(9) Enlist two beneficial insects
(10) What is syrinx and where it is situated ?
(11) Enlist stages of cellular respiration
(12) What are photosystems ?

QUESTION NO. 3 Write short answers of any Eight (8) parts of the following **16**

(1) How does theory differ from law ?
(2) What is hydroponic culture technique ?
(3) Write down chemical composition of secondary wall
(4) What is the significance of vacuole in plants ?
(5) How Algae differ from plants ?
(6) Define zooflagellates
(7) What is conjugation ?
(8) What is the significance of *Physarum polycephalum* ?
(9) Differentiate between microphyll and megaphyll leaf
(10) Define Ovule and Integument
(11) What is symplast pathway ?
(12) What are blue babies ?

QUESTION NO. 4 Write short answers of any Six (6) parts of the following **12**

(1) What is lysogenic cycle of phage ?
(2) Name four phases of Bacterial growth
(3) Enlist enzymes secreted by jejunum
(4) What do you know about disease Dyspepsia ?
(5) Write some features of rectum
(6) What is the capacity of Haemoglobin to pick and lose O_2 – during breathing ?
(7) What is tuberculosis ? Give its causes
(8) Write disadvantages of Gas-exchange in water
(9) Name the properties of Respiratory Surfaces in animals

SECTION-II

Note: Attempt any Three questions from this section **8 x 3 = 24**

Q.5 (A) Define any eight branches of biology
(B) Describe pressure flow theory of phloem transport

Q.6 (A) Write a note on carbohydrates
(B) What are various methods of asexual reproduction met within fungi ?

Q.7 (A) What are the uses and misuses of antibiotics ?
(B) Write a detailed note on class Gymnospermae

Q.8 (A) Explain replication of Bacteriophage
(B) Draw labelled sketch of Calvin cycle

Q.9 (A) Define plastids. Discuss structure and function of chloroplast
(B) Discuss characteristic processes involved in holozoic nutrition

11TH CLASS – 12019

BIOLOGY (NEW COURSE)
GROUP FIRST
ACADEMIC SESSION: 2015-2017 TO 2018-2020)

TIME: 20 MINUTES
MARKS: 17

OBJECTIVE

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1

1 The branch of biology which deals with study of ancestral history is
(A) Genetics (B) Zoogeography (C) Evolution (D) Palaeontolgy

2 Percentage of carbohydrates in mammalian cell is
(A) 1 % (B) 2 % (C) 3 % (D) 4 %

3 Covalently bonded non-protein part is called
(A) Co-enzyme (B) Prosthetic group (C) Activator (D) Co-factor

4 Parenchymatous cells are specialized for
(A) Store food (B) Support (C) Photosynthesis (D) Growth

5 The size of Parvovirus is
(A) 100 nm (B) 20 nm (C) 250 nm (D) 75 nm

6 Which one is present in all bacteria?
(A) Cell wall (B) Mesosome (C) Ribosomes (D) Plasmid

7 The example of zooflagellates is
(A) Forams (B) Vorticella (C) Entamoeba (D) Trypanosoma

8 A kind of headache migraine is treated by
(A) Ergotine (B) Lovastatin (C) Griseofulvin (D) Aspergillus

9 Funaria is an example of
(A) Hepaticopsida (B) Bryopsida (C) Psilophyta (D) Anthoceropsida

10 Reproductive system is formed from
(A) Mesoderm (B) Endoderm (C) Ectoderm (D) Hypoderm

11 In Echinodermata the larva is
(A) Planula (B) Trochophore (C) Bipinnaria (D) Echino

12 Chemical link between catabolism and anabolism is
(A) Bioenergetics (B) Respiration (C) Photosynthesis (D) ATP

13 In first step of citric acid cycle , acetyl Co A reacts with oxaloacetate to form
(A) NADH (B) Pyruvate (C) Citrate (D) FADH

14 Common ectoparasite in non-human mammal is
(A) Tics (B) Leech (C) Tapeworm (D) Flea

15 Oxygen content of fresh air is about
(A) 10 ml/liter (B) 20 ml/liter (C) 2 ml/liter (D) 200 ml/liter

16 Apoplast pathway becomes discontinuous in endodermis due to
(A) Pericycle (B) Casparian strip (C) Cortex (D) xylem

17 Atrioventricular valve present in left side of heart is
(A) Tricuspid (B) Bicuspid (C) Pulmonary valve (D) Semilunar

MARKS : 68

DEMIC SESSION: 2015-2017 TO 2018 – 2020

SECTION-I

TION NO. 2 Write short answers any Eight (8) questions of the following **16**

(1) What do you know about ionization of water?
(2) Define co-factor. Write its function.
(3) How enzyme concentration affect the rate enzyme action?
(4) What are competitive inhibitors? Why they are called reversible inhibitors?
(5) Define mycorrhizae. What is its effect on its partner?
(6) What are zygomycetes? Why they are named so?
(7) How reproduction occurs in Platyhelminthes?
(8) Write scientific and common names of two intestinal parasites of man from Phylum Aschelminthes.
(9) How complete metamorphosis is different from incomplete metamorphosis?
(10) Comment on the placement of Echinodermata at the top of list of invertebrate phyla.
(11) Define absorption spectrum along with its diagram.
(12) Give the steps of glycolysis where NADH is formed.

TION NO. 3 Write short answers any Eight (8) questions of the following **16**

(1) What is hydroponic culture technique?
(2) Differentiate between chemotherapy and radiotherapy.
(3) What are chromoplasts?
(4) Define fluid mosaic model.
(5) Name parasitic amoeba. What is the disease caused by it?
(6) What are Apicomplexans ? Give example.
(7) Why fungus like protists are not fungi ?
(8) What is *Phytophthora infestans* ?
(9) Define double fertilization in Angiosperm?
(10) Differentiate between circinate venation and reticulate venation?
(11) What are blue babies ?
(12) Define bleeding in plants ?

TION NO. 4 Write short answers any Six (6) questions of the following **12**

(1) Differentiate between virion and prion.
(2) Give postulates of " Germ Theory of Disease " by Robert Koch
(3) Can we get along without large intestine ? If not , why ?
(4) What is dyspepsia ? Give its symptoms.
(5) Differentiate between ingestion and Egestion.
(6) Air is better respiratory medium than water. How ?
(7) What is Rubisco? What is its function?
(8) Define cutaneous and pulmonary respiration.
(9) What are causes and symptom of pulmonary tuberculosis ?

SECTION-II

Attempt any Three questions from this section **8 x 3 = 24**

(a) Describe Biological Methods under following headings
(i) Deductive and Inductive reasoning (ii) Theory and Law
(b) Discuss various pathways in root followed by water to reach xylem tissue.

(a) What are monosaccharide? Give their characteristics.
(b) Describe sexual reproduction in fungi.

(a) Describe physical and chemical methods to control bacteria.
(b) Discuss different evolutionary steps in the evolution of mega phyll leaf.

(a) Write a detailed note on Hepatitis.
(b) What is glycolysis ? Draw its scheme of reactions.

(a) Differentiate between Prokaryotic and Eukaryotic cells.
(b) Write a note on four methods of nutrition in plants.

11th CLASS – 12019

OLOGY (NEW COURSE) **TIME: 20 MINUTES**
ROUP SECOND **MARKS: 17**
CADEMIC SESSION : 2015-2017 TO 2018 -2020

OBJECTIVE

TE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

ESTION NO. 1

Which of the following are being used as bio-pesticides?
(A) Bacteria (B) Fungi (C) Viruses (D) Algae

It is potential source of energy for cellular activities.
(A) C – N bond (B) C – O bond (C) C – H bond (D) C – P bond

Sacculus relates to which part of bacteria
(A) Cell wall (B) Cell membrane (C) Ribosome (D) Chromosome

One of the following is organelle of symbiotic origin
(A) Chloroplast (B) Golgi complex (C) Endoplasmic reticulum (D) Ribosome

An example of aerobic bacterium is
(A) Campylobacter (B) E. coli (C) Spirochete (D) Pseudomonas

All algae except one of the following have forms with flagellated motile cells in at least one stage of their life cycle
(A) Euglenophyta (B) Pyrrophyta (C) Rhodophyta (D) Chlorophyta

Lichens are very good bio indicators of
(A) Air quality (B) Soil quality (C) Water quality (D) Minerals quality

The class of seedless plants containing foliar sporangia is
(A) Filicinae (B) Gymnospermae (C) Angiospermae (D) Algae

An activated enzyme consisting of polypeptide chain and a cofactor is known as
(A) Isoenzyme (B) Polyenzyme (C) Holoenzyme (D) Apoenzyme

In sponges the food enters the spongocoel cavity through
(A) Ostia (B) Osculum (C) Spiracles (D) Mouth

Scientific name for Planaria is
(A) *Taenia solium* (B) *Fasciola hepatica* (C) *Schistosoma* (D) *Dugesia*

Correct molecular formula for chlorophyll 'a' is
(A) $C_{55}H_{72}O_5N_4Mg$ (B) $C_{55}H_{70}O_5N_4Mg$ (C) $C_{55}H_{72}O_4N_5Mg$ (D) $C_{55}H_{70}O_5N_5Mg$

Probably the most abundant protein on earth is
(A) Haemoglobin (B) Myoglobin (C) Rubisco (D) Pepsin

One of the following has no upper incisors
(A) Deer (B) Dog (C) Bear (D) Pig

Which is correct order of parts of air passage ways in man
(A) Nostrils, Nasal cavity, Pharynx, Larynx (B) Nasal cavity, Nostrils, Pharynx, Larynx
(C) Nasal cavity, Pharynx, Nostrils, Larynx (D) Nostrils, Pharynx, Larynx , Nasal cavity

How much of the cytoplasm of red blood cells have haemoglobin
(A) 91 % (B) 93 % (C) 95 % (D) 97 %

Hepatic portal vein carries blood from
(A) Liver (B) Alimentary canal (C) Kidneys (D) Lungs

SECTION-I

STION NO. 2 Write short answers any Eight (8) questions of the following 16

(1) What is the general formula for amino acid ?
(2) What do you know about prosthetic group ?
(3) What are two definite regions of active site ?
(4) Differentiate between competitive and non-competitive inhibitor.
(5) Define parasexulality.
(6) Give symptoms and cause of ergotism.
(7) Describe two important features of mammals.
(8) What is nymph?
(9) What are coral reefs?
(10) Give economic importance of sharks.
(11) Differentiate between cyclic and non cyclic photophosphorylation.
(12) Define glycolysis.

STION NO. 3 Write short answers any Eight (8) questions of the following 16

(1) What is hydroponic culture techniquc? Give its significance.
(2) Define storage diseases. Give examples
(3) Give any two important functions of centrioles
(4) Write a short note on zooflagellates.
(5) Give two characters of Red Algae.
(6) How green algae are similar to plants ?
(7) What is evolutionary significance of Euglenoids ?
(8) How does gymnosperms differ from angiosperms ?
(9) Define double fertilization. What is its importance ?
(10) What are biome and biosphere?
(11) Differentiate between Apoplast pathway and Symplast pathway.
(12) What are antigen and antibody ?

STION NO. 4 Write short answers any Six (6) questions of the following 12

(1) Give biological classification of corn.
(2) What is plasmid ? Give its functions.
(3) What is pyrosis?
(4) Define peristalsis.
(5) What is pleura?
(6) What is Botulism?
(7) What is diving reflex?
(8) What is emphysema?
(9) Give two properties of respiratory surface.

SECTION-II

e: Attempt any three (3) questions from this section 8 x 3 = 24

(a) How will you define a hypothesis ? Write various methods for formulating a hypothesis.
(b) Explain Apoplast, Symplast and Vacuolar pathways of water movement in roots with the help of a diagram.

(a) Describe Watson and Crick model of DNA.
(b) Write a note on Economic losses due to fungi.

(a) What are cynobacteria ? Explain structure and reproduction of Nostoc.
(b) Elaborate evolution of seed habit in plants.

(a) Describe structure and lytic cycle of a bacteriophage.
(b) Draw the labeled sketch of Krebs cycle , no need of explanation.

(a) What are lysosomes ? Describe its role in cell.
(b) What functions are performed by the oral cavity in man ?

PAPER CODE - 6461

(11th CLASS – 12018)

BIOLOGY (NEW COURSE) TIME: 20 MINUTES
GROUP FIRST MARKS: 17
ACADEMIC SESSION: (2015- 17 to 2017- 19)

OBJECTIVE

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1

1	A group of similar cells that perform specific function is called (A) Tissue (B) Organ (C) System (D) Organdles
2	Which of the following is not a fibrous protein (A) Keratin (B) Myocin (C) Fibrin (D) Hormones
3	The optimum pH for sucrase is (A) 4.00 (B) 5.00 (C) 4.50 (D) 2.00
4	Resolution of human naked eye is (A) 1.00 mm (B) 2.00 mm (C) 3.00 mm (D) 4.00 mm
5	Number of capsomeres in capsid of adenovirus is (A) 162 (B) 262 (C) 252 (D) 152
6	Bacteria without any flagella are called (A) Amphitrichous (B) Monotrichous (C) Lophotrichous (D) Atrichous
7	Length of brown algae range from few centimeters to (A) 170 meters (B) 75 meters (C) 70 cm (D) 75 cm
8	Reindeer moss used as food for reindeer is (A) Moss (B) Lichen (C) Mold (D) Club fungi
9	The process of evolution of leaf was completed in more than (A) 15-16 million year (B) 15-17 million year (C) 15-19 million year (D) 15-20 million year
10	Canines are missing in (A) Carnivores (B) Herbivores (C) Omnivores (D) Humans
11	Carbon dioxide per 100 ml of venous blood is (A) 50 ml (B) 54 ml (C) 98 ml (D) 99 ml
12	The pores by which water enters in the body of sponge is called (A) Osculum (B) Ostia (C) Mouth (D) Spongocoel
13	Polymorphism is the characteristic of members of phylum (A) Porifera (B) Cnidaria (C) Annelida (D) Arthropoda
14	Glycolysis occurs in (A) Chloroplast (B) Mitochondria (C) Ribosomes (D) Cytosol
15	The light falling on leaf surface is absorbed about (A) 1 % (B) 25 % (C) 50 % (D) 100 %
16	Single circuit heart is present in (A) Mammals (B) Reptiles (C) Amphibians (D) Fishes
17	The structures involved in guttation are (A) Lenticels (B) Hydathodes (C) Stomata (D) Cuticle

BIOLOGY (NEW COURSE) **SUBJECTIVE** **TIME : 2.40 HOURS**
GROUP FIRST **MARKS : 68**
ACADEMIC SESSION: (2015-2017 TO 2017 – 2019)

SECTION-I

QUESTION NO. 2 Write short answers any Eight (8) questions of the following **16**

(1) What are micromolecules? Give one example
(2) Define Bioremediation.
(3) What is a co-factor of an enzyme?
(4) What is lock and key model of enzyme action?
(5) What is effect of a slight change in pH on enzyme action?
(6) What is HIV?
(7) Differentiate between mycelium and hypha ?
(8) What are rusts?
(9) What are triploblastic animals?
(10) Define polymorphism.
(11) Name any two beneficial insects.
(12) What are prototherian animals?

QUESTION NO. 3 Write short answers any Eight (8) questions of the following **16**

(1) Write down the role of pili in bacteria.
(2) Write down any two characteristics of protists
(3) What is chlorella?
(4) How are Foraminiferans source of limestone?
(5) Give importance of algae.
(6) Write four characteristics of bryophytes.
(8) What is overtopping?
(7) What is chemiosmosis?
(9) What are carotenoids?
(10) What is saprophytic nutrition?
(11) What do you understand by anti-peristalsis?
(12) What is the location and function of rectum?

QUESTION NO. 4 Write short answers any Six (6) questions of the following **12**

(1) Define cell, who discovered cell?
(2) What is plasma membrane? Give its chemical composition.
(3) What is heat capacity of water?
(4) Differentiate between Active transport and Diffusion.
(5) What do you mean by plasmodesmata?
(6) Define diaphragm and pleura.
(7) What do you mean by respiratory distress syndrome?
(8) How does breathing differ from cellular respiration?
(9) Differentiate between bronchi and bronchioles.

SECTION-II

Note: Attempt any Three questions from this section **8 x 3 = 24**

5.(a) What is cloning? Explain its mechanism and write its importance.
(b) What is transpiration? Describe its types.
6.(a) Discuss the importance of Carbon .
(b) Write a note on Economic losses due to fungi.
7.(a) Discuss chloroplast in plants.
(b) Write a note on digestion in oral cavity of man.
8.(a) Sketch infection cycle of HIV.
(b) Sketch the Krebs cycle (No description)
9.(a) Write a note on nutrition in Bacteria.
(b) Differentiate between microphylls and megaphylls and describe evolution of megaphylous leaf

PAPER CODE - 6462

DG Khan Board-2018

(11th CLASS – 12018)

pakcity.org

BIOLOGY (NEW COURSE) **TIME: 20 MINUTES**

GROUP SECOND **MARKS: 17**

ACADEMIC SESSION : 2015 - 17 TO 2017 -19

OBJECTIVE

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1

1	The branch of Biology which deals with the study of environmental relations of organisms is called (A) Morphology (B) Ecology (C) Evolution (D) Zoogeography
2	The percentage by weight of RNA in a bacterial cell is (A) 0.25 % (B) 2 % (C) 3 % (D) 6 %
3	An enzyme with its co-enzyme or prosthetic group removed is designated as (A) Holoenzyme (B) Apoenzyme (C) Co-enzyme (D) Activator
4	Palade was first person to study (A) Nucleus (B) Peroxisome (C) Ribosomes (D) Mitochondria
5	In five kingdom system ,Eukaryotic multicellular reducers are placed in kingdom (A) Monera (B) Protista (C) Fungi (D) Animalia
6	A condition when tuft of flagella at each of two poles of bacteria is present is called (A) Atrichous (B) Lophotrichous (C) Amphitrichous (D) Peritrichous
7	Which one belongs to Actinopodes (A) Trypanosoma (B) Plasmodium (C) Verticella (D) Radiolarians
8	Which one is an example of foliose lichens (A) Ramalina (B) Bacidia (C) Lecanora (D) Permelia
9	Vascular plants belonging to subdivision sphenopsida are commonly called (A) Whisk ferns (B) Club mosses (C) Horsetails (D) Ferns
10	Which one is not example of phylum Mollusca (A) Loligo (B) Sepia (C) Octopus (D) Asterias
11	Which one does not belong to sub class Eutheria (A) Bat (B) Mice (C) Kangroo (D) Dolphin
12	Calvin cycle is also known as (A) C_3 Pathway (B) C_4 Pathway (C) C_5 Pathway (D) C_6 Pathway
13	The first step in the Krebs cycle is the union of Acetyl CoA with Oxaloacetate to form (A) Citrate (B) Fumarate (C) Succinate (D) Acetate
14	Parietal cells of linings of human stomach secrete (A) Mucus (B) Hydrochloric acid (C) Pepsinogen (D) Gastrin
15	100 ml of arterial blood of human being contains CO_2 (Carbon dioxide) (A) 50 ml (B) 54 ml (C) 56 ml (D) 58 ml
16	Roots bear a dense cluster of tiny hair like structures which are extensions of (A) Epidermal cells (B) Pericycle cells (C) Endodermal cells (D) Cortical cells
17	Which of the following vertebrates posses single circuit heart (A) Reptiles (B) Birds (C) Mammals (D) Fishes

(11th CLASS - 12018)

BIOLOGY (NEW COURSE)
GROUP SECOND
ACADEMIC SESSION: 2015-2017 TO 2017 - 2019

TIME : 2.40 HOURS
MARKS : 68

SUBJECTIVE

SECTION-I

QUESTION NO. 2 Write short answers any Eight (8) questions of the following **16**

(1) What are Phylatic lineage and biodiversity?
(2) Define: a) Theory b) Law
(3) Define species with an example
(4) Differentiate between reversible and irreversible inhibitor
(5) What is induced fit model of enzyme action ? Who proposed it ?
(6) What is an activator ? Give examples.
(7) Differentiate between radial symmetry and bilateral symmetry.
(8) How spiral cleavage is different from radial cleavage?
(9) What are pseudocoelomates and coelomates?
(10) Define diploblastic and triploblastic organization.
(11) What is economic importance of yeasts ?
(12) Differentiate between sporangia and conidia.

QUESTION NO. 3 Write short answers any Eight (8) questions of the following **16**

(1) Differentiate between flagellum and flagellin.
(2) Differentiate between Oomycetes and Myxomycota.
(3) What is Chlorella? Give it's an economic importance.
(4) What are Rhodophyta? Give examples and their pigments
(5) What is Plasmodium? Give names of its hosts.
(6) Differentiate between monocotyledonous and dicotyledonous
(7) Give botanical names of following plants ,Potato, Tobacco, Tomato and red pepper
(8) What is compensation point? Give its timings.
(9) Differentiate between Chlorophyll 'a' and chlorophyll 'b'. (formulae)
(10) What is meant by fluid and macrophagous feeders with examples?
(11) Differentiate between ingestion and egestion.
(12) Write down functions of nematocysts.

QUESTION NO. 4 Write short answers any Six (6) questions of the following **12**

(1) Write the functions of glyoxisomes.
(2) Differentiate between phagocytosis and pinocytosis..
(3) Define specific heat capacity of water.
(4) What is cell mediated response?
(5) What is bursa of fabricius?
(6) What are the products that are produced during photorespiration?
(7) Write down the disadvantages of gas exchange in water environment?
(8) State the effects of change in temperature on transport of oxygen in blood.
(9) How much carbon dioxide is present in venous blood? How CO_2 affects oxygen carrying capacity of haemoglobin?

SECTION-II

Note: Attempt any three (3) questions from this section **8 x 3 = 24**

5.(a) What is the role of Biology in protection and conservation of environment?
(b) Write a note on lymphatic system of man.

6.(a) Write a note on Ascomycota.
(b) Explain Primary and Secondary structure of protein.

7.(a) Write a note on Lysosomes.
(b) Dscribe absorption of food in small intestine.

8.(a) Define virus. Write a note on the characteristics of viruses.
(b) Sketch only Krebs cycle.

9.(a) What are different types of bacteria with respect to the presence of flagella.
(b) Write down characteristics of class gymnospermae.