

Roll No. of Candidate : _____

6VT-41-21

BIOLOGY

(INTERMEDIATE PART - I) 321 - (IV) Paper - I Group - I

Time: 20 Minutes

OBJECTIVE - - - - - Code : 6467

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. Attempt as many questions as given in objective type question paper and leave others blank.

1. 1 - Percentage of red pigment the haemoglobin in cytoplasm of red blood cells is _____ % .
(A) 95 (B) 90 (C) 85 (D) 80
- 2 - Plants open their stomata by actively pumping which ions, causing water to follow by osmosis.
(A) sodium ions (B) potassium ions (C) magnesium ions (D) iron
- 3 - Arterial blood contains carbon dioxide about _____ .
(A) 50 ml / 100 ml (B) 52 ml / 100 ml (C) 54 ml / 100 ml (D) 60 ml / 100 ml
- 4 - Zymogenic cells of gastric glands secrete
(A) mucous (B) hydrochloric acid (C) pepsinogen (D) ptyalin
- 5 - During respiratory chain NADH is oxidized by
(A) cytochrome b (B) cytochrome c (C) cytochrome a (D) coenzyme Q
- 6 - Plastocyanin is a protein which contains _____ .
(A) calcium (B) iron (C) copper (D) phosphorus
- 7 - Which of the following annelids is marine?
(A) stylaria (B) nereis (C) hirudo (D) pheretima
- 8 - The member of coelenterate commonly called Portuguese man of war is _____ .
(A) obelia (B) hydra (C) physalia (D) aurelia
- 9 - The example of foliose lichens is _____ .
(A) ramalina (B) bacidia (C) parmelia (D) lecanor
- 10 - Among gymnosperms taxus plant is commonly called as _____ .
(A) sago-palm (B) pine (C) deodar (D) yew
- 11 - Which of the following belongs to red algae?
(A) chondrus (B) fucus (C) chlorella (D) ulva
- 12 - When flagella surround the whole cell of bacterium, such condition is called _____ .
(A) atrichous (B) lophotrichous (C) amphitrichous (D) peritrichous
- 13 - Which of the following viral disease is caused by DNA virus?
(A) herpes simplex (B) influenza (C) mumps (D) polio
- 14 - Number of chromosomes in a diploid cell of potato is _____ .
(A) 46 (B) 48 (C) 26 (D) 14
- 15 - If non-protein part of an enzyme is loosely attached to the protein part, it is known as _____ .
(A) activator (B) prosthetic group (C) co-enzyme (D) Apo enzyme
- 16 - The percentage of water in human bone cells is _____ .
(A) 10 (B) 20 (C) 30 (D) 85
- 17 - Study of distribution of animals in nature is called _____ .
(A) Ecology (B) Environmental Biology (C) Zoogeography (D) Social Biology

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Note: Section I is compulsory. Attempt any THREE (3) questions from Section II.

(SECTION – I)

2. Write short answers to any EIGHT questions.

(2 x 8 = 16)

- i - Differentiate between anabolism and catabolism.
- ii - What do you know about "Induced Fit Model" of enzyme action?
- iii - Define active site and also give its two regions.
- iv - How enzyme-substrate complex is formed?
- v - What is nuclear mitosis?
- vi - Describe some antibiotics obtained from fungi.
- vii - Differentiate between radial and biradial symmetry.
- viii - Give four parasitic adaptations in Platyhelminthes.
- ix - Write down the characteristics of amphibians.
- x - What are running birds? Give examples.
- xi - What do you know about compensation point?
- xii - Give accessory photosynthetic pigments.

3. Write short answers to any EIGHT questions.

(2 x 8 = 16)

- i - What are bio-pesticides? Give example.
- ii - Define integrated disease management.
- iii - Differentiate between phagocytosis and pinocytosis.
- iv - What are choanoflagellates? Why they are of special interest?
- v - How algae differ from plants?
- vi - Define thallus.
- vii - How green algae and plants form a monophyletic lineage?
- viii - Why bryophytes are called amphibians of plants?
- ix - Differentiate between microphyll and megaphyll.
- x - Write down something about the Irish potato famine.
- xi - How pyruvic acid is activated?
- xii - Why calvin cycle is called as C₃-Pathway?

4. Write short answers to any SIX questions.

(2 x 6 = 12)

- i - Write down about five kingdom classification system proposed by Margulis and Schwartz.
- ii - How conjugation occurs in bacteria?
- iii - Differentiate between cardiac and pyloric sphincter.
- iv - Define digestion. Give its types.
- v - How trapping and digestion of insects occurs in venus-fly trap?
- vi - Define trachea.
- vii - How inspiration occurs in human?
- viii - Write down about the concentration of carbon dioxide in arterial and venous blood.
- ix - What is tuberculosis?

(SECTION – II)

5. (a) Write down a note on "protection and conservation of environment". (4)
- (b) Write down about "Cohesion Tension Theory" of ascent of sap. (4)
6. (a) Explain the primary and secondary structure of proteins. (4)
- (b) Write down a note on sac-fungi. (4)
7. (a) Describe flagella and their functions. (4)
- (b) Write down a note on life cycle of angiospermic plant. (4)
8. (a) Write down a note on AIDS. (4)
- (b) Draw and label calvin cycle. (Description is not required) (4)
9. (a) Write down a note on mitochondria. (4)
- (b) How absorption of food takes place in small intestine? (4)

Roll No. of Candidate : _____

GUJ-62-21

BIOLOGY

(INTERMEDIATE PART - I) 321 - (IV) Paper - I

Group-II

Time: 20 Minutes

OBJECTIVE - - - - Code : 6468

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. Attempt as many questions as given in objective type question paper and leave others blank.

1. 1 - It is estimated that in normal persons blood cells or cell like bodies constitute by volume of blood.
(A) 55% (B) 50% (C) 45% (D) 40%
- 2 - The average life span of red blood cells in human is about _____ month/months.
(A) one (B) two (C) three (D) four
- 3 - Venous blood contains carbon dioxide about _____.
(A) 50 ml / 100 ml (B) 60 ml / 100 ml (C) 54 ml / 100 ml (D) 64 ml / 100 ml
- 4 - In stomach hydrochloric acid is secreted in concentrate form. For the pepsin to act on protein pH is adjusted ranging from _____.
(A) 1 - 2 (B) 2 - 3 (C) 3 - 4 (D) 4 - 5
- 5 - During glycolysis 1 - 3 Bisphosphoglycerate gives one phosphate to ADP to convert into ATP and becomes _____.
(A) 3-phosphoglycerate (B) 2-phosphoglycerate (C) phosphoenol pyruvate (D) phosphoglycerate
- 6 - Alcoholic and lactic acid fermentations yield small amount of energy present within the chemical bonds of glucose which is converted into ATP. It is only about _____ %.
(A) 2 (B) 5 (C) 10 (D) 20
- 7 - Which of the following annelids is marine?
(A) stylaria (B) nereis (C) hirudo (D) pheretima
- 8 - Among vertebrates sting rays are _____.
(A) reptiles (B) amphibians (C) fishes (D) mammals
- 9 - Imperfect fungi belong to phylum.
(A) zygomycota (B) ascomycota (C) deuteromycota (D) basidiomycota
- 10 - Among gymnosperms cedrus plant is commonly called _____.
(A) deodar (B) hemlock (C) sago-palm (D) pine
- 11 - Which one of the following belongs to green algae?
(A) euglena (B) acetabularia (C) polysiphonia (D) fucus
- 12 - Which one of the following is an example of spiral shaped bacteria?
(A) escherichia coli (B) bacillus subtilis (C) pseudomonas (D) hyphomicrobium
- 13 - Which one of the following viral disease is not caused by RNA virus?
(A) small pox (B) influenza (C) poliomyelitis (D) mumps
- 14 - Which one of the following cellular organelles is called power house of the cell?
(A) chloroplast (B) mitochondria (C) golgibodies (D) lysosomes
- 15 - The enzymes involved in cellular respiration are found in _____.
(A) chloroplast (B) ribosomes (C) mitochondria (D) golgibodies
- 16 - Types of amino acids found to occur in cells and tissues is about _____.
(A) 150 (B) 140 (C) 155 (D) 170
- 17 - The branch of biology which deals with the use of living organisms, systems or processes in manufacturing and service industry is called _____.
(A) biotechnology (B) human biology (C) molecular biology (D) social biology

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Note: Section I is compulsory. Attempt any THREE (3) questions from Section II.

(SECTION – I)

2. Write short answers to any EIGHT questions.

(2 x 8 = 16)

- i - Define a peptide bond and how it is formed?
- ii - Differentiate between apoenzyme and holoenzyme.
- iii - What is a co-factor? Give its significance.
- iv - Give four characteristics of enzymes.
- v - How fungi differ from animals?
- vi - Write down a short note on omnivorous fungi.
- vii - Write down two differences between protostomes and deuterostomes along with examples.
- viii - Give asexual reproduction in sponges.
- ix - What are polyps and medusae?
- x - Give four characteristics of bony fishes.
- xi - How dark reaction can be summarized in an equation?
- xii - Differentiate between chlorophyll-a and chlorophyll-b.

3. Write short answers to any EIGHT questions.

(2 x 8 = 16)

- i - Differentiate between fresh water and marine water biology.
- ii - What is theory? Write down properties of a good theory.
- iii - What is primary wall? Give its chemical composition.
- iv - Differentiate between chromoplast and leucoplast.
- v - Define thallus.
- vi - Give two characteristics of Euglenoids.
- vii - Mention structural features of red algae.
- viii - Write down four importance of algae.
- ix - Name floral leaves of a flower along with their functions.
- x - What is double fertilization?
- xi - Define hypertension and its cause.
- xii - Write down two functions of lymphatic system.

4. Write short answers to any SIX questions.

(2 x 6 = 12)

- i - Write down any four characteristic features of viruses.
- ii - Write down about spiral shaped bacteria. Give all its three forms.
- iii - How trapping and digestion of insects occur in sundew?
- iv - What is dyspepsia?
- v - Define saprophytic nutrition.
- vi - How expiration occurs in human?
- vii - What is lung cancer?
- viii - How pH affects the capacity of haemoglobin to combine with oxygen?
- ix - Give composition of breathed air in man.

(SECTION – II)

5. (a) Write down a note on "protection and conservation of environment". (4)
- (b) Enlist different functions that blood performs in human body. (4)
6. (a) Write down a note on nucleic acids. (4)
- (b) Describe in detail basidiomycota. (4)
7. (a) Discuss control of bacteria by physical and chemical methods. (4)
- (b) Write down a note on evolution of leaf. (4)
8. (a) Describe life cycle of bacteriophage. (4)
- (b) Write down a note on photosystems. (4)
9. (a) Describe the structure and function of mitochondria. (4)
- (b) Write down food absorption in small intestine of man. (4)