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DGIC-51-22

**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 synthesizes and stores  
(A) tRNA (B) rRNA (C) mRNA (D) DNA
- 5 Phylum includes related  
(A) Families (B) Orders (C) Classes (D) Genera
- 6 The example of microaerophilic 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 central (C) Axile (D) Marginal
- 10 A leathery shelled egg with massive yolk is  
(A) An-amniotic egg (B) Amniotic egg (C) Shelled egg (D) Yolkeg 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<sub>2</sub>
- 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

09K-9122

**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 <sub>2</sub> 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 genetically identical organisms can be produced by asexual method ? Explain  
(B) Describe how influx of K<sup>+</sup> 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 evolved ? 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

OBJECTIVE

D92-92-22

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**QUESTION NO. 1**

- 1 Percentage of O<sub>2</sub> 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 Kangaroo 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) Methyl alcohol (D) Ethyl 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<sub>2</sub> (D) Fibrinogen
- 17 Which of the following is irrelevant for heart of amphibian ?  
(A) Right atrium (B) Right ventricle (C) Truncus arteriosus (D) Sinus venosus

**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 arthropytes ?
(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 aerophilic 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