

## MULTIPLE CHOICE QUESTIONS

SUBJECT : BIOLOGY

FULL MARKS : 80

(Each question carries one mark)

1. Glucose and amino acids are reabsorbed in the  
 A. proximal tubule      B. distal tubule      C. collecting duct      D. loop of Henle  
 [Ans. (A)]
2. The amount of CSF in the cranial cavity  
 A. 500 ml      B. 140 ml      C. 1 litre      D. 1.5 ml  
 [Ans. (B)]
3. Which one is imino acid?  
 A. Pepsin      B. Proline      C. Cysteine      D. Renin  
 [Ans. (B)]
4. The main difference between Gram positive and Gram negative bacteria is  
 A. Cell membrane      B. Cell Wall      C. Ribosome      D. Mitochondria  
 [Ans. (B)]
5. ACTH is secreted from  
 A. Adrenal cortex      B. Pituitary      C. Adrenal Medulla      D. Thyroid  
 [Ans. (B)]
6. Which of the following is the correct pathway for propagation of cardiac impulse ?  
 A. SA node → AV node → Bundle of His → Purkinje fibers  
 B. AV node → Bundle of His → SA node → Purkinje fibers  
 C. SA node → Purkinje fibers → AV node → Bundle of His  
 D. Purkinje fibers → AV node → SA node → Bundle of His  
 [Ans. (A)]
7. Inner surface of the bronchi, bronchioles and fallopian tubes are line by  
 A. cubical epithelium      B. columnar epithelium      C. squamous epithelium      D. ciliated epithelium  
 [Ans. (D)]
8. Electric potential of the brain is recorded by  
 A. CT Scan      B. Sphygmomanometer      C. ECG      D. EEG  
 [Ans. (D)]
9. Which of the following is related to humoral immunity ?  
 A. T-lymphocyte      B. B-lymphocyte      C. I-lymphocyte      D. P-lymphocyte  
 [Ans. (B)]
10. Fertilization occur in  
 A. Uterus      B. Ureter      C. Vagina      D. Fallopian tube  
 [Ans. (D)]
11. The Gastrin is secreted from  
 A. Intestine      B. Stomach      C. Pancreas      D. Rectum

12. The cause of cretinism is  
 A. Hypothyroidism      B. Hypoparathyroidism      C. Hyperthyroidism      D. Hyperparathyroidism  
**[Ans. (A)]**
13. Which of the following is a mineralocorticoid ?  
 A. Testosterone      B. Progesterone      C. Adrenalin      D. Aldosterone  
**[Ans. (D)]**
14. The part of the brain where the centre for hunger and thirst is located is  
 A. Cerebrum      B. Hypothalamus      C. Cerebellum      D. Medulla Oblongata  
**[Ans. (B)]**
15. The reflex arc, which is made of two neurons is known as  
 A. Monosynaptic reflex arc      B. Disynaptic reflex arc  
 C. Polysynaptic reflex arc      D. Asynaptic reflex arc  
**[Ans. (A)]**
16. The lactase hydrolyzes lactose into  
 A. Glucose      B. Glucose and galactose      C. Fructose      D. Glucose and fructose  
**[Ans. (B)]**
17. In 24 hours, total glomerular filtrate formed in human kidney is  
 A. 1.7 litres      B. 7 litres      C. 17 litres      D. 170 litres  
**[Ans. (D)]**
18. When the oxygen supply to the tissue is inadequate, the condition is  
 A. Dyspnea      B. Hypoxia      C. Asphyxia      D. Apnea  
**[Ans. (B)]**
19. Which one of the following is not a second messenger in hormone action ?  
 A. Calcium      B. Sodium      C. cAMP      D. cGMP  
**[Ans. (B)]**
20. The name of the pace maker of the heart is  
 A. Lymph node      B. S.A. node  
 C. Juxtaglomerular apparatus      D. Semilunar valve  
**[Ans. (B)]**
21. What is a genophore ?  
 A. DNA in prokaryotes      B. DNA and RNA in prokaryotes  
 C. DNA and protein in prokaryotes      D. RNA in prokaryotes  
**[Ans. (A)]**
22. Example of a typical homopolysaccharide is  
 A. Ligin      B. Suberin      C. Inulin      D. Starch  
**[Ans. (D)]**
23. Who wrote the famous book "Origin of Species" ?  
 A. Larmarck      B. Darwin      C. De Vries      D. Mendel  
**[Ans. (B)]**
24. Polyploid derived from two different species is called  
 A. Autopolyploid      B. Triploid      C. Allopolyploid      D. Monoploid  
**[Ans. (C)]**

25. Electrons used in Electron Microscope are of the wavelength  
 A. 0.05 Å                      B. 0.15 Å                      C. 0.25 Å                      D. 0.30 Å  
 [Ans. (A)]
26. Biolistic technique is used in  
 A. Tissue culture process                      B. Gene transfer process  
 C. Hybridization process                      D. Germplasm conservation process  
 [Ans. (B)]
27. Example of water soluble plant pigment is  
 A. Chlorophyll-a                      B. Chlorophyll-b                      C. Anthocyanin                      D. Xanthophyll  
 [Ans. (C)]
28. Structure element of Chromatin is  
 A. Histone                      B. Acid protein and DNA                      C. Nuclear matrix                      D. Nucleosomes  
 [Ans. (D)]
29. Inulin is a polymer of  
 A. Glucose                      B. Galactose                      C. Fructose                      D. Arabinose  
 [Ans. (C)]
30. Mannitol is  
 A. Amino acid                      B. Amino alcohol                      C. Sugar alcohol                      D. Sugar acid  
 [Ans. (C)]
31. A flower which can be divided into two equal halves by only one plane is  
 A. Zygomorphic                      B. Actinomorphic                      C. Regular                      D. Perfect  
 [Ans. (A)]
32. Pieces of plant tissue used in tissue culture is called  
 A. Explant                      B. Somaclone                      C. Inoculant                      D. Clone  
 [Ans. (A)]
33. VAM is  
 A. Symbiotic bacteria                      B. Saprophytic bacteria                      C. Saprophytic fungi                      D. Symbiotic fungi  
 [Ans. (D)]
34. Ovule integument gets transformed into  
 A. seed                      B. fruit wall                      C. seed coat                      D. cotyledons  
 [Ans. (C)]
35. Acid rain is caused by  
 A. NO<sub>2</sub>                      B. SO<sub>2</sub>                      C. SO<sub>3</sub>                      D. CO<sub>2</sub>  
 [Ans. (B)]
36. Which one of the following bacterium is used for production of transgenic plants ?  
 A. *Escherichia coli*                      B. *Bacillus thuringiensis*  
 C. *Staphylococcus aureus*                      D. *Agrobacterium tumefaciens*  
 [Ans. (D)]
37. A plant cell becomes turgid due to  
 A. Plasmolysis                      B. Exosmosis                      C. Endosmosis                      D. Electrolysis  
 [Ans. (C)]

38. Restriction enzymes are used to cut  
A. Single stranded RNA  
B. Double stranded DNA  
C. Single stranded DNA  
D. Double stranded RNA  
[Ans. (B)]
39. Spindle fibre is made up of  
A. humulin  
B. intermediate filament  
C. flagellin  
D. tubulin  
[Ans. (D)]
40. Edible part of Mushroom is  
A. Basidiocarp  
B. Primary mycelium  
C. Fungal hyphae  
D. Basidiospores  
[Ans. (A)]
41. Calcium level decreases in the blood due to hyposecretion of  
A. Parathyroid hormone  
B. Calcitonin  
C. Thyroxine  
D. Adrenaline  
[Ans. (A)]
42. Kupffer's cells are  
A. Phagocytic  
B. Mast cells  
C. Hormone secreting  
D. Digestive juice secreting  
[Ans. (A)]
43. Which centre is stimulated during increase in body temperature ?  
A. Anterior hypothalamus  
B. Posterior hypothalamus  
C. Limbic system  
D. Red nucleus  
[Ans. (A) Heat loss centre i.e. Anterior hypothalamus]
44. Name the following having oxygen storing capacity  
A. Myoglobin  
B. Actin  
C. Myosin  
D. Fibrin  
[Ans. (A)]
45. Longest phase of meiosis  
A. Prophase I  
B. Prophase II  
C. Anaphase I  
D. Metaphase II  
[Ans. (A)]
46. Tetany is caused by  
A. Hyperparathyroidism  
B. Hypoparathyroidism  
C. Hyperthyroidism  
D. Hypothyroidism  
[Ans. (B)]
47. Which of the following is a gastro intestine hormone ?  
A. Prolactin  
B. Enterokinase  
C. GH  
D. FSH  
[Ans. (B)]
48. Name the hormone that has no role in menstruation.  
A. LH  
B. FSH  
C. GH  
D. TSH  
[Ans. (D)]
49. Which of the following substances can cure Parkinson's disease ?  
A. GABA  
B. Acetylcholine  
C. Dopamine  
D. Glutamic acid  
[Ans. (C)]
50. Movement of tongue muscle is controlled by  
A. facial nerve  
B. trigeminal nerve  
C. hypoglossal nerve  
D. vagus nerve  
[Ans. (C)]

51. Which function will be lost due to damage of occipital lobe ?  
 A. Hearing                      B. Speech                      C. Vision                      D. Memory  
**[Ans. (C)]**
52. Meissner's corpuscles occur in  
 A. Brain                      B. Nerve cells                      C. Skin                      D. Tongue  
**[Ans. (C)]**
53. Osteomalacia is a deficiency disease of  
 A. Infants due to protein energy malnutrition                      B. Adults due to protein energy malnutrition  
 C. Adults due to Vitamin D deficiency                      D. Infants due to Vitamin K deficiency  
**[Ans. (C)]**
54. The gene of sickle cell anaemia is inherited by  
 A. Blood cells                      B. Bone cells                      C. Sex chromosomes                      D. Autosomes  
**[Ans. (D)]**
55. Ptyalin is inactivated by a component of gastric juice known as  
 A. Pepsin                      B. Mucus                      C. Rennin                      D. HCl  
**[Ans. (D)]**
56. Which one of the following human cells do not contain mitochondria ?  
 A. Nerve cell                      B. Red blood cell                      C. Liver cell                      D. White blood cell  
**[Ans. (B)]**
57. In which stage of the first meiotic division two sister chromatids are formed ?  
 A. Leptotene                      B. Zygotene                      C. Pachytene                      D. Diplotene  
**[Ans. (C)]**
58. Which one of the following triplet codons is a chain termination codon ?  
 A. UGU                      B. AAU                      C. UUG                      D. UAG  
**[Ans. (D)]**
59. How many pairs of contrasting characters in pea pod were chosen by Mendel ?  
 A. 3                      B. 5                      C. 7                      D. 9  
*[ According to English version Answer is B i.e. 5 pairs.  
 According to Bengali version pair is NOT mention in question ]*
60. If a cross between two individuals produces offsprings with 50% dominant character (A) and 50% recessive character (a) the genotype of parents are  
 A. Aa × Aa                      B. Aa × aa                      C. AA × aa                      D. AA × Aa  
**[Ans. (B)]**
61. Structural lipids of cell membrane are  
 A. Simple lipid                      B. Chromolipids                      C. Steroid                      D. Phospholipids  
**[Ans. (D)]**
62. Which one of the following is polysaccharide ?  
 A. Glycogen                      B. Sucrose                      C. Lactose                      D. Maltose  
**[Ans. (A)]**
63. What will be the codons in m-RNA if the DNA codes are ATG-CAG ?  
 A. TAC – GTC                      B. UAC – GUC                      C. UCA – TUA                      D. TCA – GTC  
**[Ans. (B)]**

64. Which of the following species is restricted to a specific area ?  
 A. Sibling species      B. Allopatric species      C. Sympatric species      D. Endemic species  
**[Ans. (D)]**
65. Which one of the following is NOT correctly matched ?  
 A. Sycon – Canal system      B. Star fish – Radial symmetry  
 C. Ascaris – Flame cell      D. Prawn – Haemocoel  
**[Ans. (C)]**
66. Which one of the following animal phyla does not possess a coelom ?  
 A. Platyhelminthes      B. Annelida      C. Mollusca      D. Echinodermata  
**[Ans. (A)]**
67. Cardiac muscles are  
 A. Striated and voluntary      B. Striated and involuntary  
 C. Smooth and voluntary      D. Smooth and involuntary  
**[Ans. (B)]**
68. Which one of the following immunoglobulins is found as pentamer ?  
 A. IgG      B. IgM      C. IgA      D. IgE  
**[Ans. (B)]**
69. Which one of the following cells is not a phagocytic cell ?  
 A. Macrophage      B. Monocyte      C. Neutrophil      D. Basophil  
**[Ans. (D)]**
70. Which one of the following is the most primitive ancestor of man ?  
 A. *Homo habilis*      B. *Australopithecus*  
 C. *Rampithecus punjabicus*      D. *Homo neanderthalensis*  
**[Ans. (C)]**
71. A female Anopheles mosquito can be recognized by  
 A. Proboscis and palpi are long and more or less of equal length  
 B. Proboscis long and palpi short  
 C. Proboscis short and palpi long  
 D. Both proboscis and palpi are short  
**[Ans. (A)]**
72. The anterior V-spot in microfilaria of *Wuchereria* represents  
 A. Nerve ring      B. Cervical papilla      C. Excretory System      D. Reproductive system  
**[Ans. (C)]**
73. In a population, unrestricted reproductive capacity is called  
 A. Biotic potential      B. Fertility      C. Carrying capacity      D. Birth rate  
**[Ans. (A)]**
74. When the two ecosystems overlap each other, the area is called  
 A. Habitat      B. Niche      C. Ecotone      D. Ecotype  
**[Ans. (C)]**
75. Pyramid of energy in ecosystems is  
 A. Always upright      B. Always inverted      C. Mostly upright      D. Mostly inverted  
**[Ans. (A)]**

76. Which one of the following is mainly responsible for green house effect ?  
A. SO<sub>2</sub>                      B. CO<sub>2</sub>                      C. CO                      D. O<sub>2</sub>                      [Ans. (B)]
77. Which one of the following is an exotic carp species ?  
A. *Barbus stigma*              B. *Cyprinus carpio*              C. *Labeo bata*              D. *Cirrhinus mrigala*              [Ans. (B)]
78. Which of the following two hormones are essential for induced breeding of fishes?  
A. TSH and ACTH                      B. Oestrogen and progesterone  
C. FSH and LH                      D. Vassopressin and oxytocin                      [Ans. (C)]
79. Which stage of malarial parasite is infective to man?  
A. Gametocyte                      B. Merozoite                      C. Cryptomerozoite                      D. Sporozoite                      [Ans. (D)]
80. The scientific name of the moth which produce tasar is  
A. *Bombyx mori*                      B. *Antheraea mylitta*  
C. *Antheraea assamensis*                      D. *Philosomia ricini*                      [Ans. (B)]

**DESCRIPTIVE QUESTIONS**  
**SUBJECT : BIOLOGY**  
**FULL MARKS : 20**  
**(Each question carries two marks)**

1. What are poikilothermic animals ?

Ans. Also called cold blooded animals. Their body temperature changes according surrounding environment. These animals are less active.

e.g. all invertebrates, fishes, amphibians, reptiles.

2. Write two functions of juxtaglomerular apparatus.

Ans. Functions :

(i) Juxtaglomerular cells secretes Renin which through RAAS (Renin-Angiotensis Aldosterone System) help in absorption of  $\text{Na}^+$  from DCT and therefore increases Blood pressure.

(ii) Its Macula densa cells act as chemoreceptor feeding information to JG cells.

3. State two differences between red and white muscle.

Ans. Difference between Red & White Muscle.

**Red Muscles**

- i) Rich in Myoglobin.
- ii) Mitochondria are more in number.
- iii) Less sarcoplasmic reticulum.
- iv) Can carry out considerable aerobic respiration.
- v) Slow rate of contraction for long period.

**White Muscles**

- i) Less myoglobin.
- ii) Less in number.
- iii) More sarcoplasmic reticulum.
- iv) Depends mainly on anaerobic respiration.
- v) Fast rate of contraction for short period.

4. What is the difference between pinocytosis and phagocytosis ?

Ans.

**Phagocytosis**

- i) Bulk intake of fluid material by cell.
- ii) Vesicles formed are small.
- iii) Lysosome play no role.

**Pinocytosis**

- i) Intake of solid material from outside to inside of the cell.
- ii) Large
- iii) Lysosomes are essential.

5. State four important functions of plasma membrane.

Ans. (i) Helps in Transport by active and passive processes.

(ii) Take part in Exocytosis and Endocytosis.

6. What is bioaccumulation ?

Ans. Different types of elements and compound deposited inside the living beings. Which is called Bioaccumulation or Bioconcentration. Like in scallops maximum quantity of Zn, Cu, Cd and Cr deposited and in human beings maximum Iodide deposited in thyroid glands.



7. What is a test cross ? Why is it so named ?

Ans. When  $F_1$  progeny is crossed with recessive parent then it is called Test Cross. Test Cross helps to find out the genotype of dominant individual.

8. What is ribozyme ?

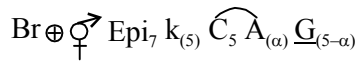
Ans. Ribozymes are the RNA molecules (Non protein enzyme) that possess catalytic activity they function in RNA splicing reactions.

9. What are mycorrhizae?

Ans. The association of fungi with the roots of higher plant, is called mycorrhizae. Mycorrhizal association found in conifers plant.

10. Write down the scientific name of China rose plant. Give its floral formula.

Ans. *Hibiscus rosasinensis* :



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