

Biology**Section A**

Q. 1. Select the correct alternatives and write the answers :

- 1) Telencephalon is the other name of **1**
- A) pons varolii
B) medulla oblongata
C) cerebrum
D) cerebellum
- 2) The phenomenon of nuclear fusion of sperm and egg is known as **1**
- A) karyogamy
B) parthenogenesis
C) vitellogenesis
D) oogenesis
- 3) Which of the following country has the greatest ecosystem diversity? **1**
- A) Norway
B) India
C) Sweden
D) Finland
- 4) PCR technique was developed by **1**
- A) Stanley Cohen
B) Herbert Boyer
C) W. Arber
D) K. Mullis
- 5) In plant body, amides are transported through **1**
- A) sieve tubes
B) xylem vessels
C) phloem parenchyma
D) plasmodesmata

- 6) The types of pollination exhibited by Vallisneria and Zea mays respectively are ... 1
- A) anemophily and hydrophily
 - B) entomophily and hydrophily
 - C) hydrophily and anemophily
 - D) hydrophily and entomophily
- 7) Haemozoin is 1
- A) a precursor of haemoglobin
 - B) a toxin from Streptococcus
 - C) a toxin from Plasmodium
 - D) a toxin from Hemophilus
- 8) Morphogenetic movements occur during ... 1
- A) blastulation
 - B) gastrulation
 - C) fertilization
 - D) cleavage
- 9) A DNA molecule in which both strands have ^{14}N is allowed to replicate in an environment containing ^{15}N . What will be the exact number of DNA molecules that contain the ^{14}N after three replications? 1
- A) One
 - B) Two
 - C) Four
 - D) Eight
- 10) The nasal cavity is divided into right and left nasal chambers by a 1
- A) sphenoid
 - B) palatine
 - C) mesethmoid
 - D) zygomatic

Q. 2. Answer the following questions :

- 11) Name the causative agent of typhoid fever? 1
- 12) Which kind of immunity is provided by vaccination? 1
- 13) Give definitions of the following 1
- Gestation

- 14) What is the microbial source of vitamin B₁₂? 1
- 15) Name the pathogen causing Malaria. 1
- 16) The types of cellular respiration. 1
- 17) What lac operon consists of? 1
- 18) Name the following 1

Example of homologous organs in plants.

Section B

Attempt any EIGHT of the following questions :

- 19) Explain how *Bacillus thuringiensis* acts as a bio-control agent. 2
- 20) Give the name of the causative agent of ringworm. 2
- 21) Match the columns 2

Column A	Column B
(1) Pioneer species	(a) Entire gradient of communities
(2) Climax species	(b) Spatial pattern
(3) Succession	(c) Quercus
(4) Sere	(d) Crustose lichen

- 22) Give significance of the following: 2
hCG [human chorionic gonadotropin].
- 23) What is a vaccine? 2
- 24) Sketch and label Carbon cycle 2
- 25) What can be the causes of deviation from 1 : 1 sex ratio in natural habitat? 2
- 26) Distinguish Between: 2
Phenotype and Genotype.

- | | | |
|-----|--|---|
| 27) | Sketch and label - T.S. of Artery, Vein and Capillary. | 2 |
| 28) | How do monocytes perform amoeboid movement and phagocytosis? | 2 |
| 29) | Mention examples of imbibition process. | 2 |
| 30) | Give significance of the following:

Implantation. | 2 |

Section C

Attempt any EIGHT of the following questions :

- | | | |
|-----|--|---|
| 31) | Distinguish between the following

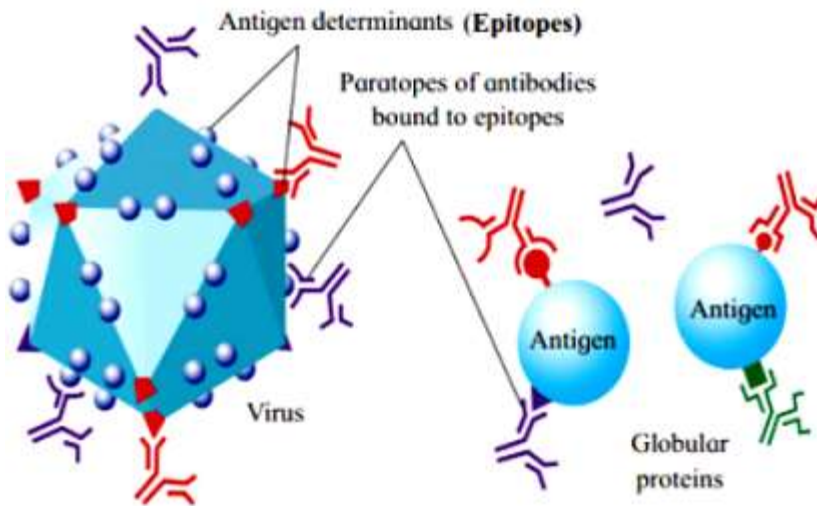
Glucocorticoids and mineralcorticoids | 3 |
| 32) | Ever wondered as to how we are able to understand the smell of the first showers of rain, or the sudden changes in the climate ? | 3 |
| 33) | Write the short notes on the following

Omithophily. | 3 |
| 34) | Write short notes on the following

Meristems | 3 |
| 35) | How transgenic animals are produced.? | 3 |
| 36) | What are the different types in which genes could be delivered during gene therapy? | 3 |
| 37) | Person who has undergone a heart transplant needs lifetime supply of immune-suppressants. | 3 |
| 38) | What are the unique features of acquired immunity? | 3 |
| 39) | Write a note on Human genome project (HGP). | 3 |
| 40) | Write short notes:

Amniocentesis | 3 |

- 41) All the fragments of a genome are cloned for storing them in genomic library. 3
- 42) Observe the given diagram and answer the following questions: 3



- (1) What is I and II in the above diagram?
- (2) What structures are responsible for antigen and antibody complex? Identify them in the above diagram.
- (3) What is the study of antigen-antibody interactions called?

Section D

Attempt any **THREE** of the following questions :

- 43) Explain the following parts of male reproductive system along with labelled diagram showing these parts- Testis, vasa deferentia, epididymis, seminal vesicle, prostate gland and penis. 4
- 44) In a person, Pars distalis part of the Pituitary gland is not producing hormones in sufficient quantity. Explain the effects it will produce with respect to the different hormones. 4
OR
Give names and functions of hormones secreted by adenohypophysis.
- 45) Where is the pituitary gland located? Enlist the hormones secreted by the anterior pituitary. 4
- 46) Describe Avery, McCarty and MacLeod's experiments. 4