

Biology**Section A**

MCQ Single Correct

- 1) Telencephalon is the other name of **1.0**
- A) pons varolii
 - B) medulla oblongata
 - C) cerebrum
 - D) cerebellum
- 2) The phenomenon of nuclear fusion of sperm and egg is known as **1.0**
- A) karyogamy
 - B) parthenogenesis
 - C) vitellogenesis
 - D) oogenesis
- 3) Which of the following country has the greatest ecosystem diversity? **1.0**
- A) Norway
 - B) India
 - C) Sweden
 - D) Finland
- 4) PCR technique was developed by **1.0**
- A) Stanley Cohen
 - B) Herbert Boyer
 - C) W. Arber
 - D) K. Mullis
- 5) In plant body, amides are transported through **1.0**
- A) sieve tubes
 - B) xylem vessels
 - C) phloem parenchyma
 - D) plasmodesmata
- 6) The types of pollination exhibited by Vallisneria and Zea mays respectively are ... **1.0**
- A) anemophily and hydrophily
 - B) entomophily and hydrophily
 - C) hydrophily and anemophily
 - D) hydrophily and entomophily

- 7) Haemozoin is **1.0**
- 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 ... **1.0**
- 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? **1.0**
- A) One
 - B) Two
 - C) Four
 - D) Eight
- 10) The nasal cavity is divided into right and left nasal chambers by a **1.0**
- A) sphenoid
 - B) palatine
 - C) mesethmoid
 - D) zygomatic
- 11) Name the causative agent of typhoid fever? **1.0**
- 12) Which kind of immunity is provided by vaccination? **1.0**
- 13) Give definitions of the following **1.0**
- Gestation
- 14) What is the microbial source of vitamin B_{12} ? **1.0**
- 15) Name the pathogen causing Malaria. **1.0**
- 16) The types of cellular respiration. **1.0**
- 17) What lac operon consists of? **1.0**
- 18) Name the following **1.0**
- Example of homologous organs in plants.

Section B

Short Description

- 19) Explain how *Bacillus thuringiensis* acts as a bio-control agent. **2.0**
- 20) Give the name of the causative agent of ringworm. **2.0**
- 21) Match the columns **2.0**

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

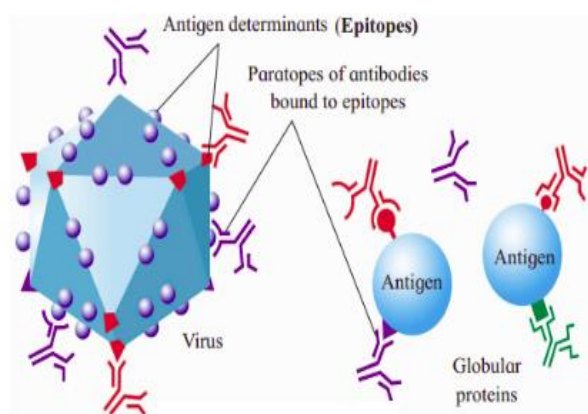
- 22) Give significance of the following: **2.0**
hCG [human chorionic gonadotropin].
- 23) What is a vaccine? **2.0**
- 24) Sketch and label Carbon cycle **2.0**
- 25) What can be the causes of deviation from 1 : 1 sex ratio in natural habitat? **2.0**
- 26) Distinguish Between: **2.0**
Phenotype and Genotype.
- 27) Sketch and label - T.S. of Artery, Vein and Capillary. **2.0**
- 28) How do monocytes perform amoeboid movement and phagocytosis? **2.0**
- 29) Mention examples of imbibition process. **2.0**
- 30) Give significance of the following: **2.0**
Implantation.

Section C

Medium Description

- 31) Distinguish between the following **3.0**
Glucocorticoids and mineralcorticoids
- 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 ? **3.0**
- 33) Write the short notes on the following **3.0**
Omithophily.
- 34) Write short notes on the following **3.0**
Meristems

- 35) How transgenic animals are produced.? 3.0
- 36) What are the different types in which genes could be delivered during gene therapy? 3.0
- 37) Person who has undergone a heart transplant needs lifetime supply of immune-suppressants. 3.0
- 38) What are the unique features of acquired immunity? 3.0
- 39) Write a note on Human genome project (HGP). 3.0
- 40) Write short notes: 3.0
- Amniocentesis
- 41) All the fragments of a genome are cloned for storing them in genomic library. 3.0
- 42) Observe the given diagram and answer the following questions: 3.0



- (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

Long Description

- 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. 4.0
- 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. 4.0
- 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. 4.0
- 46) Describe Avery, McCarty and MacLeod's experiments. 4.0