

**Directorate of Education, GNCT of Delhi**  
**Term – II (Session – 2021-22)**  
**Class- 12**  
**Subject- Biology**  
**Suggestive Answers**

**SECTION –A**

Ans1)

- a) Absorb Phosphorus from soil. **(1)**
- b) Protect from root borne pathogen. **(1)**

Ans2) i) Bacterial cell treated with lysozyme.  $(\frac{1}{2} * 4)$

- ii) RNA is removed by RNases and proteins are removed by proteases
- iii) Purified by addition of chilled Ethanol.
- iv) Removed by spooling.

**OR**

Objective of GEAC:

- a) Ethical standards to evaluate the morality of human activities. **(1)**
- b) To have regulations, as genetic modifications of organisms have unpredictable results. **(1)**

Ans3) i) Fragmentation and Habitat Loss.  $(\frac{1}{2} * 4)$

- ii) Over exploitation of species by man
- iii) Invasion of alien species.
- iv) Co-extinction.

Ans4) a) Dengue and Chicken guinea. **(1)**

b) Salmonella typhium. **(1)**

**OR**

- a) Entamoeba histolytica.  $(\frac{1}{2})$
- b) Constipation, Abdominal cramps and pain, stool with excess mucus and blood clots.  $(1\frac{1}{2})$

Ans5) a) caused due to deletion of gene coding for the enzyme Adenosine deaminase. **(1)**

- c) Genetically engineered lymphocytes have fix life span, patient require periodic infusion.

Gene isolated from bone marrow cells producing functional ADA is introduced in embryonic stage. **(1)**

Ans6) It states that two closely related species competing for the same resources. **(1)**

Cannot co-exist indefinitely and the competitively inferior one will be eliminated eventually. Eg- plant pollen and wasp interaction. **(1)**

### **SECTION –B**

Ans7) a) When an alien DNA or rDNA is ligated within the coding sequence of an enzyme, the enzyme become inactivated, this phenomenon is called as insertional inactivation. **(1)**

b) i) Ori (origin of Replication) is a sequence of DNA where replication starts. **(1)**

ii) Ropgene- codes for the proteins involved in replication of the plasmid. **(1)**

Ans8)

S. no.	Cancerous Cells	Normal Cells
1	These cells divide in an uncontrolled manner	They show normal and controlled cell division
2	They don't show contact inhibition	They show contact inhibition
3	They have long life span	They have finite lifespan
4	They show metastasis	They don't show metastasis

Ans9) Life cycle of malarial parasite:  $(2\frac{1}{2})$

Mosquito bite release sporozoite → Asexual Division in Liver → Asexual Multiplication in RBC

→ RBC Rupture release Hemozoin Gametes are produced → Fertilization in →

Mosquitoes' intestine → Zooid is stored in salivary glands.

Infective stage of plasmodium is sporozoite.  $(\frac{1}{2})$

**OR**

a) The exaggerated response of the Immune system to certain antigens present in the environment is called allergy.  $(\frac{1}{2})$

b) Most of the cells release chemicals like histamine and serotonin. **(1)**

c) Symptoms i) sneezing, ii) watery eyes and iii) Running nose.  $(1\frac{1}{2})$

Ans10) RNAi refers to the silencing of the specific mRNA by complementary double- standard RNA that binds to and prevent the translation of RNA. **(1)**

Ti plasmid of agrobacterium is used as a vector to introduce the nematode-specific genes into host plant in such a way that it produces both sense and anti-sense RNA in the host. **(2)**

Ans11) i) speciation is a function of time, temperate regions were subjected to frequent glaciations in the past, while tropics remained undisturbed.

ii) Tropical environment are less seasonal and more constant, more predictable.

iii) More solar radiations in the tropics contributes to more productivity. **(3)**

Ans12) i) statin --- obtained from manescuspurpureus ---- used as blood cholesterol lowering agent.

ii) cyclosporine A : Trichoderma polysporum used as immuno suppressive agents. (2+1)

**SECTION-C**

Ans13) a) It is a cannabinoid --- cannabis sativa --- source plant.(1)

b) Hashish, Ganja, Marijuana, Charas.(2)

c) Taken by inhalation and oral ingestion.(1)

d) cardio-vascular system is affected. (1)

**OR**

a) Exponential growth curve and when resources are unlimited. (1)

b) When resources are limited, predation pressure. (1)

c) k represents carrying capacity (1)

carrying capacity refers to the maximum number of individuals that a given environment can support, beyond which further growth is not possible. (1)