

Tvl12Bio

TIRUNELVELI DT

Common Quarterly Examination - September 2022



Standard 12

BIOLOGY

Time Allowed: 3.00 Hours

Maximum Marks: 70

PART - I [BIO-BOTANY]

Marks: 35

Section - 1

Answer all the questions:

8×1=8

- 1) The first cell of male gametophyte in angiosperm is
 - a) Nucleus
 - b) Microspore
 - c) Primary Endosperm Nucleus
 - d) Megaspore
- 2) The scar left by funiculus in the seed is
 - a) tegman
 - b) radicle
 - c) epicotyl
 - d) hilum
- 3) The recessive trait to the dominant trait of yellow cotyledon is
 - a) Green cotyledon
 - b) White cotyledon
 - c) Axial cotyledon
 - d) Wrinkled cotyledon
- 4) The genotype of a plant showing the dominant phenotype can be determined by
 - a) Back cross
 - b) Test cross
 - c) Dihybrid cross
 - d) Pedigree analysis
- 5) What is Nullisomy?
 - a) $2n-1$
 - b) $2n-2$
 - c) $2n+2$
 - d) $2n+1$
- 6) ECORI cleaves DNA at
 - a) GAATTC
 - b) AGGGTT
 - c) TATAGC
 - d) GTATATC
- 7) In which techniques Ethidium Bromide is used
 - a) Southern Blotting techniques
 - b) Western Blotting techniques
 - c) Polymerase Chain Reaction
 - d) Agrose Gel Electroporosis
- 8) Who is regarded as the father of tissue culture?
 - a) Karl Ereky
 - b) Gottlieb Haberlandt
 - c) Mendal
 - d) Boliver and Rodriguez

Section - 2

Answer any four of the following questions:

4×2=8

- 9) What is Mellitophily?
- 10) Define Test cross.
- 11) What are the enzymes you can use to cut terminal end and internal phosphodiester bond of nucleotide sequence?
- 12) What is gene mapping?
- 13) Name the enzymes used in Genetic Engineering.
- 14) What is Totipotency?

Section - 3

Any three of the following questions. Q.No. 19 is compulsory:

3×3=9

- 15) List out the function of tapetum.
- 16) What are multiple alleles?
- 17) What do you know about the word pBR 322?
- 18) Mention the name of man made cycle How it is formed? (Chart only)
- 19) Give an account on cryopreservation.

Section - 4

Answer all the questions:

2×5=10

- 20) With a suitable diagram explain the structure of an ovule. (OR)
Explain Incomplete Dominance with an example.
- 21) Compare the various types of Blotting techniques. (OR)
Write the applications of plant tissue culture.



Tvl12Bio

PART - II [BIO-ZOOLOGY]

Marks: 35

Part - I

Answer all the questions:

8×1=8

- 1) Which among the following animals exhibit ovoviviparity?
a) Frog b) Shark c) Sheep d) Hen
- 2) The male sex hormone testosterone is secreted from
a) Sertoli cells b) Leydig cell c) Epididymis d) Prostrate gland
- 3) **Assertion** : LNG-20 are often called as hormone releasing intrauterine system (IUS).
Reason : They increase the viscosity of the cervical mucus and there by prevent sperms from entering the cervix.
a) (A) is true, (R) is false.
b) Both (A) and (R) are true. (R) is the correct explanation of (A).
c) (A) is false, (R) is true.
d) Both (A) and (R) are true but (R) is not the correct explanation of (A).
- 4) 21 trisomy is observed in
a) Down's syndrome b) Paten's syndrome
c) Turner's syndrome d) Klinefelter's syndrome
- 5) Which among the codon codes for methionine?
a) AUG b) UAA c) UUA d) AUG
- 6) Modern man belongs to which period?
a) Quaternary b) Cretaceous c) Silurian d) Cambrian
- 7) The Athlete's foot disease in human is caused by
a) Bacteria b) Fungi c) Virus d) Protozoan
- 8) Which of the following pair is correctly matched for the product produced by them?
A) Acetobacter aceti - Antibiotics
B) Methanobacterium - Lactic acid
C) Penicillium notatum - Acetic acid
D) Saccharomyces cerevisiae - Ethanol

Part - II

Answer ANY FOUR questions of the following:

4×2=8

- 9) What is Apolysis?
- 10) What is known as capacitation of sperm cells?
- 11) What is holandric genes?
- 12) Differentiate leading strand and lagging strand.
- 13) What are interferons? Mention their role.
- 14) Why do we call some strains of bacteria as "superbug"?

Part - III

Write any three of the following in which question no. 19 is compulsory: 3×3=9

- 15) Mention the symptoms of Down's syndrome.
- 16) Why is statutory ban imposed on amino centesis in India?
- 17) Why the human Genome project is called a mega project?
- 18) What is sewall wright effect?
- 19) What are non-infectious disease? Give an example.

Part - IV

Answer all questions:

2×5=10

- 20) Write a note on extra embryonic membranes. (OR)
What is colour blindness? How X-linked gene inherited in the marriage between hemizygous recessive male and normal visioned woman?
- 21) How does Hardy-Weinberg's expression ($p^2 + 2pq + q^2 = 1$) explain that genetic equilibrium is maintained in a population? List any four factors that can disturb the genetic equilibrium. (OR)
Explain the structure of Immunoglobulin with suitable diagram.