

COMMON QUARTERLY EXAM - 2024

Standard - XII

12FB09.

Time : 3.00 hrs

BIOLOGY

Marks: 70

Part - I Bio-Botany

Marks: 35

Section - I

8×1=8

Choose the correct answer.

- Size of the Pollen grain in Myosotis
 - 10 Micrometer
 - 20 Micrometer
 - 200 Micrometer
 - 100 Micrometer
- In which techniques Ethidium Bromide is used?
 - Southern Blotting Technique
 - Western Blotting Technique
 - Polymerase chain reaction
 - Agrose gel electroporosis
- The genes controlling seven Pea characters studied by Mendel are known to be located in how many different chromosomes?
 - 7
 - 6
 - 5
 - 4
- Solidifying agent used in plant tissue culture is
 - EDTA
 - Agar
 - Nicotinic Acid
 - Colaltous chloride
- Identify the Test Cross
 - Tt×tt
 - TT×tt
 - Tt×TT
 - Tt×Tt
- Assertion (A) : Gamma rays are generally used to induce mutation in wheat varieties.
Reason (R) : Because they carry lower energy to non-ionize electrons from atom
 - (A) is wrong (R) is correct
 - (A) and (R) are correct
 - (A) and (R) are wrong
 - (A) is correct (R) is wrong
- Which of the following represent Megagametophyte?
 - Ovule
 - Embryosac
 - Nucellus
 - Endosperm
- Match the following:

| Column A | Column B |
|-------------------------|------------------------------|
| 1. Exonuclease | a) Add or Remove phosphate |
| 2. Endonuclease | b) Binding the DNA fragments |
| 3. Alkaline phosphatase | c) cut the DNA at terminus |
| 4. Ligase | d) cut the DNA at middle |
| a) 1-a, 2-b, 3-c, 4-d | b) 1-c, 2-d, 3-b, 4-a |
| c) 1-a, 2-c, 3-b, 4-d | d) 1-c, 2-d, 3-a, 4-b |

Section - II

4×2=8

Note: Answer any four questions:-

- What is Pollenkit?
- Give the names of scientists who rediscovered Mendelism.
- Differentiate Linkage and Crossing over.
- What is Cantharophily?
- What is called Phytoremedialion?
- What are embryoids?

Section - III

3×3=9

Note: Answer any three questions. Q.No.19 is compulsory:

- Draw the structure of an ovule and label the parts.
- What is genetic mapping? Write its uses.
- Give an account on "Cryopreservation"?
- What are the seven characters of Pisum sativum studied by Mendel?
- What do you know about the word PBR 322?

Section - IV

2×5=10

Answer all the questions in detail:-

- What is Endosperm? Explain the types. [or]
 - Bring out the inheritance of chloroplast gene with an example.
- What is single cell protein? Mention its applications? [or]
 - Explain the basic concepts involved in Plant Tissue Culture.

(2)

Part - II Bio-Zoology
Section - I

XII BIOLOGY

Marks: 35

Choose the correct answer.

8×1=8

- 1) The phenomenon of "Industrial Melanism" demonstrates
 - a) Reproductive isolation
 - b) Geographical isolation
 - c) Natural selection
 - d) Induced mutation
- 2) Chromosome 'y' has _____ genes
 - a) 231
 - b) 256
 - c) 531
 - d) 220
- 3) ZW-ZZ system of sex determination not occur in _____
 - a) Birds
 - b) Reptiles
 - c) Mammals
 - d) Fishes
- 4) Which one is incorrectly matched?
 - a) Multiload 375 - Copper releasing IUD
 - b) Hormone releasing IUD - LNG-20
 - c) Lippes loop IUD - Non-medicated IUD
 - d) Saheli - Progestraset
- 5) The process which sperm undergoes before penetrating the ovum is
 - a) Spermiogenesis
 - b) Spermiation
 - c) Capacitation
 - d) Cortical reaction
- 6) Paedogenesis occurs in
 - a) Liverfluke
 - b) Cockroach
 - c) Earthworm
 - d) Vorticella
- 7) Assertion (A): Ovulation is the release of ovum from the Graffian follicles.
Reason (R): It occurs during the follicular phase of the menstrual cycle.
 - a) A is true R is false
 - b) A is false R is true
 - c) Both A and R are false
 - d) Both A and R are true
- 8) In eukaryotes which gene region has many AT
 - a) Terminator
 - b) Coding strand
 - c) Template strand
 - d) Promotor

Section - II

Note: Answer any four questions in very short:-

4×2=8

- 9) What is "Thelytoky"? Give an example.
- 10) Differentiate Spermiogenesis and Spermatogenesis
- 11) Expand the following: i) ZIFT ii) ICSI
- 12) What is Lyonisation?
- 13) What was the experimental proof of Meselson and Stahl?
- 14) Define Hardy-Weinberg law.

Section - III

Note: Answer any three of the following questions in brief. Q.No.19 is compulsory:

3×3=9

- 15) Differentiate between Divergent evolution and convergent evolution with one example for each.
- 16) Give the reasons for colour blindness.
- 17) How to prevent STDs?
- 18) Diagrammatic view of Female Reproductive system showing Uterus, Ovary and Fallopian Tube.
- 19) Distinguish between monocistronic and polycistronic condition of the structural gene.

Section - IV

Note: Answer the following questions in detail:

2×5=10

- 20) a) Explain the major reproductive events in human beings. [or]
- b) Tabulate any four viral STI and their causative agents and two symptoms each.
- 21) a) What is Karyotyping? Write the applications of Karyotyping. [or]
- b) Explain the experimental approach to the origin of life by Urey and Miller with suitable diagram.
