

Class : 12

Register

**SECOND REVISION EXAMINATION - 2025**

Time Allowed : 3.00 Hours]

**BIOLOGY**

[Max. Marks : 70

PART - I (Bio-Botany) (Marks : 35)

**SECTION - I**

Note. (i) Answer All the questions. [akwaacademy.blogspot.com](http://akwaacademy.blogspot.com) 8×1=8  
 (ii) Choose the most appropriate answer from the given four alternatives and write the option code and corresponding answer.

- Which one of the following is an example of polygenic inheritance?
  - Flower colour in mirabilis jalapa
  - Production of male honey bee
  - Pod shape in garden pea
  - Skin colour in humans
- In which techniques ethidium bromide is used?
  - Southern blotting techniques
  - Western blotting techniques
  - Polymerase chain Reaction
  - Agarose Gel Electrophoresis
- Find out the correctly matched pair.
  - Rubber - shorea rebusta
  - Dye - Lawsonia inermis
  - Timber - Cyperus papyrus
  - Pulp - Hevea brasiliensis
- Assertion:** Sporopollenin preserves pollen in fossil deposits  
**Reason :** Sporopollenin is resistant to physical & biological decomposition.
  - Assertion is true; reason is false
  - Assertion is false; reason is true
  - Both assertion & reason are not true
  - Both assertion & reason are true
- Solar energy used by green plants for photosynthesis is only.
  - 2 - 8%
  - 2- 10%
  - 3 - 10%
  - 2 - 9%
- In flavrsavr Tomato, the ripening process is delayed by the enzyme -----
  - Barnase
  - Polygalacturnase
  - Endotoxin
  - Transferase
- An example for comutagens
  - Mustard gas
  - Nitrous acid
  - Ascorbic acid
  - Magnous salt
- Palynology is the study of -----
  - Stamens
  - Pollengrains
  - Bee pollen
  - Anther cavity

**SECTION - II****Note : Answer any four questions.**

4x2=8

- What are psychoactive drugs? Give one example.
- Define food chain? Give an example?
- What is seed ball?
- Mention the different types of culture medium used in plant tissue culture?
- How are microbial inoculants used to increase the soil fertility?
- 'Endothecium is associated with dehiscence of anther'. Justify the statement?

**SECTION - III****Note : Answer any three questions. Question No. 19 is compulsory.**

3x3=9

- Explain Atavism.
- Write the significance of crossing over.
- What do you know about the word  $P_{322}^{BR}$ ?
- What is thermal stratification? Explain its types?
- Explain about "Queen of spices" & Write their uses.

**SECTION - IV****Note : Answer all the questions.**

2x5=10

- (a) Explain the Mechanism of crossing over. (OR)  
 (b) Shape of pyramid in a particular ecosystem is always different in shape. Explain with the example.
- (a) Explain the steps involved in Recombinant DNA technology. (OR)  
 (b) Which is called as the "King of Bitters"? Mention their medicinal importance.

## PART – II ( BIO-ZOOLOGY) (Max. Marks: 35)

## SECTION – I

Note: (i) Answer all the questions

(ii) Choose the most appropriate answer from the given four Alternatives and write the option code and the corresponding answer. 8 x 1 = 8

- The mode of sexual reproduction in bacteria is by
  - formation of gametes
  - endospore formation
  - conjugation
  - zoospore formation
- Assertion:(A) The human ovum is surrounded by primary, secondary and tertiary membranes**  
**Reason (R) The human ovum is surrounded by vitelline membrane, zona pellucida, corona radiata, theca externa, theca interna and graafian follicle.**
  - Both (A) and (R) are true and (R) explains (A)
  - Both (A) and (R) are true and (R) does not explain (A)
  - Both (A) and (R) are false
  - (A) is true but (R) is false
- Which one of the following is true regarding human embryo?
  - Testes are the derivative of endoderm
  - Liver develops from mesoderm
  - Brain is the derivative of ectoderm
  - parathyroid glands are the derivative of mesoderm.
- Which one of the following is correctly matched?
  - Copper T - disturbs ovulation
  - Saheli - suppresses sperm mobility
  - Tubectomy - prevents ejaculation
  - Lippes loop - disturbs endometrium growth
- Find out true and false statements from the following:
  - A nitrogen base linked with a hexose sugar at carbon number one forms nucleotide.
  - Adenine combines with thymine and cytosine combines with guanine. It is known as Chargaff's law
  - The discontinuous method of synthesis of DNA fragments in the leading strand is called Okazaki fragment.
  - Polycistronic structural gene is seen in prokaryotes.
  - (i) and (ii) are true; (iii) and (iv) are false
  - (i) and (iv) are false; (ii) and (iii) are true
  - (ii) and (iv) are true; (i) and (iii) are false
  - (i), (iii) and (iv) are true; (ii) is false
- Match the following and find the correct answer:
 

i. malaria	-	A. Epidermophyton	a) i.(D), ii.(C), iii.(A), iv.(B)
ii. Pneumonia	-	B. Rhino virus	b) i.(D), ii.(B), iii.(C), iv. (A)
iii. Ringworm	-	C. Streptococcus	c) i.(B), ii.(C), iii.(D), iv. (A)
iv. Common cold	-	D. Plasmodium	d) i.(B), ii.(A), iii.(D), iv. (C)
- ELISA is mainly used for
  - Detection of mutations
  - Detection of pathogens
  - Selecting animals having desired traits
  - Selecting plants having desired traits.
- As per 2017 statistics, the higher per capita emitter of carbon dioxide in the world is
  - USA
  - China
  - Qatar
  - Saudi Arabia

## SECTION - II

Note : Answer any four of the following questions.

4x2=8

- What is colostrum? Write its role in protecting the infants against infection.
- Write note on *Ideonella sakaiensis*.
- Define Agrochemicals.
- What are called endangered species? Give example.
- What are interferons? mention their role.
- Write any two applications of PCR?

## SECTION - III

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

3x3=9

- Write the process of budding in hydra.
- Differentiate between somatic cell therapy and germline cell therapy.
- PCR technique is a useful tool in early diagnosis of COVID - 19. How?
- Give any three reasons for the loss of biodiversity.
- How will you help your friend (who is a drug addict) to come out of drug addiction.

## SECTION - IV

Note : Answer all the questions.

2x5=10

- (a) Discuss about detection of foetal disorders during early pregnancy. (OR)  
(b) Mention the main objections to darwinism.
- (a) Mention the advantages & disadvantages of cloning? (OR)  
(b) Write about population dispersion.