

## COMMON QUARTERLY EXAMINATION - SEPTEMBER 2019

Standard - 12

Reg No.

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## PART - III - BIOLOGY

Time Allowed: 2.30 Hours

Maximum Marks: 70

- Instructions:**
1. Check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall Supervisor immediately.
  2. Use Blue or Black ink to write and underline and pencil to draw diagrams.

**Note:** Candidate should answer Part-I (Bio-Botany) & Part-II (Bio-Zoology) in separate answer-books.

## PART - I [BIO-BOTANY]

Marks: 35

## Section - I

- Note:**
- i) Answer all the questions. 8×1=8
  - ii) Choose the most appropriate answer from the given four alternatives and write the option code and corresponding answer.

- 1) A plant called "X" possesses small flower with reduced perianth and versatile anther. The probable agent for pollination would be  
a) Water                      b) Air                      c) Butterflies                      d) Beetles
- 2) "Gametes are never hybrid". This is a statement of  
a) Law of dominance                      b) Law of independent assortment  
c) Law of segregation                      d) Law of random fertilization

## 3) Match the following:

## Column - A

- i) Syngenesions
- ii) Androecium
- iii) Male gametophyte
- iv) Primary Parietal Layer

## Column - B

- A) Pollen grain
- B) Anther wall
- C) Asteraceae
- D) Stamens

- |    | i | ii | iii | iv |
|----|---|----|-----|----|
| a) | D | A  | B   | C  |
| c) | C | D  | B   | A  |

- |    | i | ii | iii | iv |
|----|---|----|-----|----|
| b) | C | D  | A   | B  |
| d) | C | A  | D   | B  |

## 4) Match the following:

## Column - A

- i) Exonuclease
- ii) Endonuclease
- iii) Alkaline phosphatase
- iv) Ligase

## Column - B

- A) add or remove phosphate
- B) blinding the DNA fragment
- C) cut the DNA at terminus
- D) cut the DNA at middle

- |    | i | ii | iii | iv |
|----|---|----|-----|----|
| a) | A | B  | C   | D  |
| c) | A | C  | B   | D  |

- |    | i | ii | iii | iv |
|----|---|----|-----|----|
| b) | C | D  | B   | A  |
| d) | C | D  | A   | B  |

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XII - Biology

- 5) Which of the following sentences are correct?
- The offspring exhibit only parental combinations due to incomplete linkage.
  - The linked gene exhibit some crossing over in complete linkage.
  - The separation of the two linked genes are possible in incomplete linkage.
  - Crossing over is absent in complete linkage.
- a) (1) and (2)      b) (2) and (3)      c) (3) and (4)      d) (1) and (4)
- 6) Which of the following statement is correct?
- Agar is not extracted from marine algae such as seaweeds.
  - Callus undergoes differentiation and produces somatic embryoids.
  - Surface sterilization of explants is done by using mercuric bromide.
  - pH of the culture medium is 5.0 to 6.0.
- 7) Solidifying agent used in plant tissue culture is
- Nicotinic acid
  - Cobaltous chloride
  - EDTA
  - Agar
- 8) Which of the following soil water is available for plants?
- Gravitational water
  - Chemically bound water
  - Capillary water
  - Hygroscopic water

**Section - II****Answer any four of the following questions:****4 × 2 = 8**

- What is Micro propagation?
- What do you know about pleiotropy?
- How will you identify asymmetric cuts?
- What are Evergreen forests?
- How can we protect the cells or tissues from stress of freezing temperature in cryopreservation technique?
- Write any four ecologically important days.

**Section - III****Answer any three questions. Question No. 19 is compulsory.****3 × 3 = 9**

- Draw and label the T.S. of mature anther.
- Explain the types of crossing over.
- What are the materials used to grow microorganism like Spirulina?
- What is thermal stratification? Mention their types.
- What are the three parts of a patent? List out the general steps in patenting.

**Section - IV****Answer all the questions:****2 × 5 = 10**

- 20) Bring out the inheritance of chloroplast gene with an example.

**(OR)**

Explain the steps involved in Recombinant DNA Technology with diagram.

- 21) Explain the basic concepts involved in plant tissue culture.

**(OR)**

- Green algae are not likely to be found in the deepest strata of the ocean. Give at least one reason.
- What is vivipary? Name a plant group which exhibits vivipary.

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## PART - II [BIO-ZOOLOGY]

XII - Biology

Marks: 35

## Section - I

**Note:** i) Answer all the questions. 8×1=8  
 ii) Choose the most appropriate answer from the given four alternatives and write the option code and the corresponding answer.

- 1) In which type of parthenogenesis are only males produced?  
 a) Arrhenotoky      b) Thelytoky      c) Amphitoky      d) Both a and c
- 2) Which of the following is not belonging to the accessory glands of the male reproductive system?  
 a) Bulbourethral gland      b) Cowper's gland  
 c) Bartholin's gland      d) Prostate gland
- 3) **Assertion (A)** : LNG-20 are often called as hormone releasing intrauterine systems (IUS).  
**Reason (R)** : 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 (B) are true (R) is the correct explanation of (A).  
 c) (A) is false, (R) is true.  
 d) Both (A) and (B) are true but (R) is not the correct explanation of (A).
- 4) Meselson and Stahl's experiment proved  
 a) Transduction  
 b) Transformation  
 c) DNA is the genetic material  
 d) Semi-conservative nature of DNA replication
- 5) Sudden appearance of vestigial organs in highly evolved organisms is called  
 a) Vestigial organs      b) Connecting link  
 c) Atavistic organs      d) Adaptive radiation
- 6) Which one of the following statements is not correct?  
 a) Bursa of Fabricius is a primary lymphoid organ of birds.  
 b) B lymphocytes mature in the bursa.  
 c) Bursa of Fabricius brings cell mediated immunity.  
 d) Bursa of Fabricius brings humoral immunity.
- 7) The gases produced in anaerobic sludge digesters are  
 i) Methane, Oxygen and Hydrogen sulphide  
 ii) Hydrogen sulphide, Methane and Sulphur dioxide  
 iii) Hydrogen sulphide, Methane and Nitrogen  
 iv) Methane, Hydrogen sulphide and CO<sub>2</sub>  
 a) (i) is true. (ii), (iii) and (iv) are false.  
 b) (i), (ii) and (iii) are false. (iv) is true.  
 c) (ii), (iii) and (iv) are true. (i) is false.  
 d) All are false statements



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XII - Biology

- 8) Match the following and choose the correct combination from the options given below.

**Column I**

1. Mutualism
2. Commensalism
3. Parasitism
4. Competition
5. Predation

**Column II**

- i) Lion and deer
- ii) Round worm and man
- iii) Birds compete with squirrels for nuts
- iv) Sea anemone on hermit crab
- v) Birds and mammals are helpful in dispersal of seeds

- a) 1-iv 2-v 3-ii 4-iii 5-i      b) 1-iii 2-i 3-iv 4-ii 5-v  
 c) 1-ii 2-iii 3-i 4-v 5-iv      d) 1-v 2-iv 3-ii 4-iii 5-i

**Section - II****Answer any four of the following questions:****x2=8**

- 9) What is known as Paedogamy?
- 10) Differentiate foeticide and infanticide.
- 11) Write the symptoms of Patau's syndrome.
- 12) Mention any two objections to Darwinism.
- 13) What is Zymology?
- 14) What are Stenotherms?

**Section - III****Answer any three of the following questions:****3×3=9****Question No. 19 is compulsory.**

- 15) What is parthenogenesis? Give two examples from animals.
- 16) What is amniocentesis? Why a statutory ban is imposed on this technique?
- 17) State the name of an immunosuppressant used in organ transplantation is produced from *Trichoderma polysporum* and write its uses.
- 18) Give the salient features of Mutation Theory.
- 19) Define Ecological Niche.

**Section - IV****Answer all the questions:****2×5=10**

- 20) Give a schematic representation of spermatogenesis and oogenesis in humans.

**(OR)**

What is Colour Blindness? How X-linked gene inherited in the marriage between hemizygous recessive male and normal visioned woman.

- 21) Why did Hershey and Chase use radioactively labelled phosphorus and sulphur only? Would they have got the same result if they used radio labelled carbon and nitrogen?

**(OR)**

Describe the structure of immunoglobulin with suitable diagram.

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