

## BIOLOGY PUBLIC EXAMINATIONS-2023

### ENGLISH VERSION

Instruction:(1)Check the question paper for fairness of printing.If there is any lack of printing inform the hall supervisor immediately.

(2)Use **Blue** or **Black** Ink to write and underline and pencil to draw diagram.

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

### PART-I (Bio-BOTANY)

#### SECTION-1

**Note:**(i)Answer **all** the questions.

(ii)Choose the most appropriate answer from the given **four** alternatives and write down the corresponding option code with answer.

1.Which year is declared as the “International year of the pulses”.

- (a) 2017
- (b) 2018
- (c) 2015
- (d) 2016

2.Munch hypothesis is based on:

- (a) translocation of food due to TP gradient and imbibition force
- (b) ranslocation of food due to TP
- (c) translocation of food due to imbibition force
- (d) None of the above

3.Identify the incorrect statement about the Gram positive bacteria.

- (a) Teichoic acid Present
- (b) High percentage of peptidoglycan is found in cell wall
- (c) Cell wall is single layered
- (d) Lipopolysaccharide is absent in cell wall

4.A true fruit is the one where .....

- (a) only ovary of the flower develops into fruit
- (b) ovary and calyx of the flower develops into fruit
- (c) ovary, calyx and thalamus of the flower develops into fruit
- (d) all floral whorls of the flower develops into fruit

5.What is the fate of primary xylem in a dicot root showing extensive secondary growth?

- (a) It is retained in the center of the axis
- (b) It gets crushed

- (c) May or may not get crushed
- (d) It gets surrounded by primary phloem

6. Select the wrong statement from the following:

- (a) Formative phase of the cells retain the capability of cell division.
- (b) In elongation phase development of central vacuole takes place.
- (c) In maturation phase thickening and differentiation takes place.
- (d) In maturation phase, the cells grow further.

7. Endosperm in Gymnosperm is formed .....

- (a) at the time of fertilization
- (b) before fertilization
- (c) after fertilization
- (d) along with the development of embryo

8. Proteins perform many physiological functions. For example some functions as enzymes. One of the following represents an additional function that some proteins discharge .....

- (a) Antibiotics
- (b) Pigment conferring colour to skin
- (c) Pigments making colours of flowers
- (d) Hormones

## SECTION-2

**Note:** Answer **any four** question.

9. Write the distinguishing features of monera.

10. State the Protoplasm theory.

11. In which group of plants are guard cells dumbbell shaped?

12. What are tyloses?

13. A tree is believed to be releasing oxygen during day time. Do you believe the truthfulness of this statement? Justify your answer by giving suitable answers.

14. Respiratory quotient is zero in succulent plants. Why?

### SECTION-3

**Note:** Answer **any three** questions. Question number **19** is **compulsory**.

15. Write the similarities and differences between *Avicennia* and *Trapa*.

16. A transverse section of the trunk of a tree shows concentric rings which are known as growth rings. How are these rings formed? What is the significance of these rings?

17. Write the Physiological effects of Cytokinin.

18. Write down the significance of Meiosis.

19. The process of Guttation occurs through hydathodes- Explain the guttation with the neat labelled diagram of hydathode.

### SECTION-4

**Note:** Answer **all** the questions.

20. Mention the features that the Gymnosperms resemble with the angiosperms and tabulate the difference between Gymnosperms and Angiosperms.

OR

How will you distinguish the Solanaceae members from the Liliaceae members?

21. Explain in detail the insectivorous mode of nutrition in plants.

OR

Describe the Lock and Key mechanism of enzyme with the neat labelled diagram and classify the enzymes based on co-factors.

## PART-II(BIO-ZOOLOGY)

### SECTION-1

**Note:**(i)Answer **all** the questions.

(ii)Choose the most appropriate answer from the given **four** alternatives and write down the corresponding option code with answer.

1.Which of the following substances in tobacco smoke damage the gas exchange system?

- (a) carbon monoxide and carcinogens
- (b) carbon monoxide and nicotine
- (c) carcinogens and tar
- (d) nicotine and tar

2.Which of the statement regarding Lac insect is TRUE?

- (a) A microscopic, resinous crawling scale insect
- (b) Inserts its proboscis into plant tissue suck juices and grows
- (c) Secretes lac from the hind end of body
- (d) The male lac insect is responsible for large scale production of lac

3.Cartilage is the –

- (a) Loose connective tissue
- (b) Dense connective tissue
- (c) Areolar connective tissue
- (d) Specialized connective tissue

4.Molecular taxonomic tool consists of –

- (a) DNA and RNA
- (b) Mitochondria and Endoplasmic reticulum
- (c) Cell wall and Membrane proteins
- (d) All the above

5.Appendicular skeleton is .....

- (a) Girdles and their limbs
- (b) Vertebrae
- (c) Skull and vertebral column
- (d) Ribs and sternum

6.Which of the following statement about sex hormones is correct?

- (a) Testosterone is produced by Leydig cells under the influence of luteinizing hormone
- (b) Progesterone is secreted by corpus luteum and softens pelvic ligaments during child birth
- (c) Oestrogen is secreted by both sertoli cells and corpus luteum
- (d) Progesterone produced by corpus luteum is biologically different from the one produced by placenta.

7.The head region of Cockroach pairs of and shaped eyes occur.

- (a) One pair, sessile compound and kidney shaped
- (b) Two pairs, stalked compound and round shaped
- (c) Many pairs, sessile simple and kidney shaped
- (d) Many pairs, stalked compound and kidney shaped

8.What is hematocrit/packed cells volume?

- (a) The ratio of WBCs to blood plasma
- (b) The ratio of RBCs to blood plasma
- (c) The ratio of platelets to blood plasma
- (d) The ratio of plasma and blood cells

## SECTION-II

**Note:** Answer **any four** questions.

9.List the unique feature of birds endoskeleton.

10.Head of cockroach is called hypognathous.Why?

11.Why is Pneumonia considered a dangerous disease?

12.How is urea formed in human body?

13.Tabulate the functions of brain lobes.

14.What does the Honey bees teach us?

## SECTION-3

**Note:** Answer **any three** question.Question number **19** is **compulsory**.

15.Enumerate the characteristic features of different epithelia.

16.Digestive secretions are secreted only when needed.Discuss.

17. Discuss about Cardio Pulmonary Resuscitation (CPR).

18. How does an isotonic contraction take place?

19. Which hormone is referred to as the 3F hormone? What does the 3F refer to? List the function of the hormone.

#### SECTION-IV

**Note:** Answer **all** the questions.

20. Explain in detail the three domains of life proposed by Carl Woese.

OR

Describe the events involved in inspiration and expiration of human breathing.

21. The sense of taste is considered to be the most pleasurable of all senses. Describe the structure of the receptor involved with a neat labelled diagram.

OR

Concept Mapping – Use the following terms to create a concept map that shows the major characteristic features of the phylum Nematoda: Round worms, pseudocoelomates, digestive tract, cuticle, parasite and sexual dimorphism.

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