PART - III

BIOLOGY

[ Tamil & English Versions]

[Cjןארק קינפה : 3進め ]
Time Allowed : 3 Hours ]

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

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

PART - I (BOTANY)

(Marks : 75)

Blista - A / SECTION - A

Note:
(i) Answer all the questions.
(ii) Choose and write the correct answer.

[ ניבقع / Turn over]
1. \( (\alpha) \ 2n-1 \quad (\beta) \ 2n+1 \quad (\gamma) \ 2n+2 \quad (\delta) \ 2n-2 \)

Nullisomy is represented by:
(a) \(2n-1\) \hspace{1cm} (b) \(2n+1\) \hspace{1cm} (c) \(2n+2\) \hspace{1cm} (d) \(2n-2\)

2. மளிக காலத்தில் தமிழகம் தேசியமாக தொழில்வு ஏற்றவியுள்ளது:

(\(\alpha\) காயாவப் போனல்) \hspace{1cm} (\(\beta\) காய போனல் பைரியம்)

(\(\gamma\) காய பைரியம்) \hspace{1cm} (\(\delta\) காயமாகவேறுப்பு

Which prevents the accumulation of cholesterol in human body?
(a) Fat \hspace{1cm} (b) Single Cell Protein
(c) Vitamin \hspace{1cm} (d) Carbohydrates

3. இல்லை பூ பொருளி பிறந்தவுடன் ஆதிக்கும்பிரிவுப்பென்று:

(\(\alpha\) குருடல் விலிவேல்) \hspace{1cm} (\(\beta\) குருடல் விலிவேல் கிளை)

(\(\gamma\) காண்க வேல்) \hspace{1cm} (\(\delta\) காண்க வேல் பாதிக்கின்ற)

The Binomial System was introduced by:
(a) Carolus Linnaeus \hspace{1cm} (b) Camp and Gilly
(c) Casparay \hspace{1cm} (d) Gaspard Bauhin

4. பல்லவத்தட்டலாக அழிந்தவுடன் தீர்மானப்பாறையே:

(\(\alpha\) பல்லவத்தட்டலாக காம்பு) \hspace{1cm} (\(\beta\) பல்லவத்தட்டலாக காம்பு

(\(\gamma\) பல்லவத்தட்டலாக காம்பு) \hspace{1cm} (\(\delta\) பல்லவத்தட்டலாக காம்பு

Phloem parenchyma is absent in:
(a) Dicots \hspace{1cm} (b) Monocots
(c) Gymnosperms \hspace{1cm} (d) Pteridophytes

5. பம்பானை மட்டுமியம் றதுருத்தினிதே போர்பிவெளியுள்ள ஆண்டி அரங்கனை மிகச் சிறிய தலையே:

(\(\alpha\) புரிசோல்காண்க) \hspace{1cm} (\(\beta\) பொருந்தென்றே

(\(\gamma\) புரிசோல்காண்க) \hspace{1cm} (\(\delta\) பொருந்தென்றே

The strongest painkiller obtained from Papaver Somniferum is:
(a) Quine \hspace{1cm} (b) Morphine
(c) Digoxin \hspace{1cm} (d) Ephedrine
6. The essential component for the formation of chlorophyll:
   (a) Mg  (b) Fe  (c) Cl  (d) Mn

7. Dark respiration is the function of:
   (a) peroxisomes  (b) mitochondria
   (c) chloroplast  (d) ribosomes

8. Which of the following hormones delays the ageing in plants?
   (a) Auxins  (b) Gibberellins
   (c) Cytokinins  (d) Ethylene

9. In Ricinus Communis the stamens are:
   (a) Polyadelphous  (b) Diadelphous
   (c) Dimorphic  (d) Monadelphous

10. The two protoplasts are fused with fusogen called:
    (a) polyethylene glycol  (b) polyvinyl chloride
    (c) polyethane glycol  (d) phosphoric ethane
11. In mature sieve elements the pores in the sieve plate are blocked by a substance called:
(a) Cutin  (b) Callose  
(c) Suberin  (d) Lignin

12. The first order in Bentham and Hooker’s classification of plant is:
(a) Malvales  (b) Polemoniales  
(c) Ranales  (d) Rosales

13. The Rice Tungro Virus is transmitted by:
(a) Mosquitoes  (b) Aphids  
(c) Leaf hoppers  (d) Ants

14. In paddy the haploid set of chromosome number is:
(a) 12  (b) 23  (c) 40  (d) 631
प्रश्न - भाग / SECTION - B

Note: Answer any seven questions.

15. 'द्विवेदी अभिलेखं' सवाल ने रणनीति क्या?

What is called nomen ambiguous?

16. काँवडे तंत्र तंत्र क्या? एम्ब्रोजन्स भोक.

What is cladode? Give an example.

17. तंत्रिकनुवादन करार्निवृत्ति विभवायमम.

Differentiate Sclereids from Fibres.

18. उपरुप वस्त्रवान तंत्रवान रणनीति?

What are called passage cells?

19. एकल RNA-की अभिलेख प्रयोग वाचन का वर्णकार्य क्या?

Draw t-RNA and label its parts.

20. टोलिनप्टप्रकार (SCP) विभवायमम.

Define SCP.

21. काँवडे रणनीति क्या?

Define respiratory quotient.

22. वानस्पतिक स्वीकार प्रकार रणनीति? सामीक कार्यं भोक.

What is a growth inhibitor? Give an example.
23. Write three differences between photo respiration and dark respiration.

24. What are biomedicines? Give an example.

25. Bring out the importance (significance) of Herbarium.

26. Describe the vascular bundle in Monocot stem.

27. Describe the special types of chromosomes with diagram.

28. How is DNA cut?

29. Write the differences between cyclic photophosphorylation and non-cyclic photophosphorylation.
30. State any five physiological effects of Gibberellin.

31. Write any five aims of plant breeding.

पाचन - ४ / SECTION - D

मापम: (i) समस्तप्रकारं जिवाणं लीलाकारकं लीलामध्यकं. 2x10=20

(ii) जीवाण क्रियाकलापं पक्ष वक्तुव.

Note: (i) Answer any two questions.
(ii) Draw diagrams wherever necessary.

32. दात्रासिनमधील तरुणमीलां तेलविण्यासाठी लिहिलं. मलिका वाटपावलं वाळून, मलिका लाक्षणिक्यांना लक्षित.

Describe Daturametal in botanical terms. Draw the floral diagram and write the floral formula.

33. वायू नैसर्गिकं पुरुष नातु लिहिलं वाळून.

Write an Essay on xylem tissues.

34. कृत्तिक रूढ अवस्थेत अवस्थेत विलेंड्रिकं लिहिल्या.

(पक्षेकंबरलं)

Explain the basic techniques of plant tissue culture. (Diagram not necessary)

35. जैविकलक्षणं अंडेकुण्ड C₂ रुबुरीप्रवीण लिहिलं. (बसपालं अंडेकुण्ड लिहिलं)

Explain photorespiration or C₂ cycle (Flow chart or explanation).
PART-II (Zoology) / (Marks - 75)  

SECTION - A

1. Which is called hyper glycemic hormone? 
   (a) Insulin  (b) Adrenalin  (c) Glucagon  (d) Thyroxine

2. The book ‘philosophie-Zoologique’ was written by: 
   (a) Charles Darwin  (b) Jean Baptiste de lamarck  (c) Mc Dougall  (d) G.J. Mendel

3. In human chromosome karyotyping the chromosomes X and Y belong to groups: 
   (a) B and C  (b) C and D  (c) C and G  (d) G and D
4. The diluting fluid used to count RBC is:
   (a) Turk’s solution  (b) Toisson solution  
   (c) Lymphatic solution  (d) Hayem’s solution

5. Sometimes an allergen may cause a sudden, violent and fatal reaction in a sensitive individual; this is called:
   (a) Haematopoiesis  
   (b) Cytotoxic cells  
   (c) Anaphylaxis  
   (d) Multiple sclerosis

6. Which one of the following chemotherapeutic agent is secreted by the leucocytes and fibroblasts:
   (a) Ampicillin  (b) Interferon  
   (c) Imidazole  (d) Amantidine
7. The autosomal dominant gene causes:
(a) Sickle cell anemia  
(b) Thalassemia
(c) Agammaglobulinemia  
(d) Huntington’s chorea

8. The virus which causes smallpox is:
(a) Para virus  
(b) Hepatitis B virus
(c) Variola virus  
(d) Oncogenic virus

9. Pain during urination and a yellow discharge from the urethra of male are the symptoms of:
(a) Gastroenteritis  
(b) Venereal syphilis
(c) Plague  
(d) Gonorrhea
10. The most abundant green house gas is:
   (a) Methane
   (b) Carbon-dioxide
   (c) Trifluromethyl penta fluoride
   (d) Chlorofluoro carbon

11. The region of brain which secretes cerebrospinal fluid is:
   (a) Vermis
   (b) Flocculus
   (c) Choroid plexus
   (d) Medulla oblongata

12. Which would be the future alternative fuel option?
   (a) Hydel power
   (b) Hydrogen
   (c) Thermal power
   (d) Solar power

13. The state of Corneal epithelium being wrinkled and keratinised is called:
   (a) Cirrhosis
   (b) Xerophthalmia
   (c) Dementia
   (d) Osteomalacia
14. Which of the following fowls is noted for its pugnacity?
(a) Chittagong  (b) Busra
(c) Aseel       (d) Karaknath

15. During contraction of the muscles, the ATP molecules bind with the active site of:
(a) myosin filament  (b) myofibrils
(c) nerve ending     (d) actin filament

16. Which is considered as dairy breeds?
(a) Sindhi and Gir
(b) Kangayam and Gir
(c) Hariana and Ongole
(d) Malvi and Siri
17. What are the causes of Obesity?

18. State the functions of corpus luteum.

19. Write the symptoms of cholera.

20. What are the main three functions of free antibodies?


22. Mention any two uses of karyotyping of human chromosome.

23. Write the significance of superbugs.

24. What is c-DNA library (complementary DNA)?
25. List out the names of other three bio-reserves in India, except Tamil Nadu.

26. What are the precautions and first-aid for milk fever?

27. Mention any three advantages of auto-analyser.

28. Define the germplasm theory.


30. Write the symptoms of AIDS, defined by WHO.

31. Write the unique features of adaptive immunity.
32. What is the scope of Bio-informatics?

33. Describe polymorphism.

34. Explain the mechanism of breathing with neat labelled diagrams.

35. Describe the functioning of human forebrain.

36. Discuss ‘Ozone’ a natural sun-block.

37. Describe the preparation of fish pond and management of fish farm.