



Biology II

09

E

I

Three Hours

Additional Reading Time – 10 Minutes

Use **additional reading time** to go through the question paper, select the questions you will answer and decide which of them you will priorities.

Index No

Instructions:

- This question paper consists of 10 questions in 8 pages
- This paper consists of two parts A and B. Time provided to answer these two parts is three hours.

PART A – Structured Essay: (Pages 1-7)

Answer **all** four questions on this paper itself.

Write your answers in the space provided for each question. Note that the space provided is sufficient for your answers and that extensive answers are not expected.

PART B–Essay: (Page 8)

Answer **four** questions only. Use the given papers to answer these questions.

- At the end of the time allotted for this paper, tie the **two parts together** so that **Part A is on top of Part B** before handing them over to the supervisor.
- You are permitted to remove **only Part B** of the question paper from the examination hall.

Part A –Structured Essay
Answer all questions on this paper itself
Each question carries 10 marks

1. (A)

I. a. Which polysaccharide is found in liner form that is found in cell wall of plant?

.....

b. What are the two behaviours of the two ends of the phospholipids related with water?

.....
.....

II. State the organelle that is found in fat storing tissues in plants and mention the function.

Organelle

Function

III. How to ADP act as a allosteric activator?

.....
.....

IV. What are the colours are more effective for chlorophyll a according to action spectrum

.....

- V a. State the name of final electron acceptor in ethyl alcohol fermentation and lactic acid fermentation
- Ethyl alcohol fermentation
- Lactic acid fermentation
- b. What are the products released when one molecule of Pyruvate is reached into citric acid cycle
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-

(B)

- I. Name the phylum in which the following features are observed
- a) Parapodia
- b) Chitinous exoskeleton
- c) Flame bulb

- II.a) What is an artificial group that includes polyphyletic
-
- b) State 2 important features of the above mentioned Kingdom.
-
-

III. What are the two benefits reduced gametophytes retained within sporophyte?

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.....

IV. What are the three structural features of the gametophyte of spike mosses

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.....

.....

V. In which place do the basidiospores of *Agaricus* develop?

.....

(C)

I. Mention two differences between the shoot apex and the root apex

.....

.....

.....

II.a) What is stomata?

.....

.....

b) What are the three factors affecting stomatal action function?

.....

.....

.....

III. Give 1 example of each of the following modes of nutrition.

a) Mutualism

b) Commensalism

c) Parasitism

IV. What is similar structure of microsporangia of *Cycas* in Angiosperms?

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V. What are the strategy of seed plants for life on land

.....
.....
.....
.....

2. (A)

I. Mention any two locations where the following epithelial tissues are found in humans

- a) Simple cuboidal
- b) Stratified squamous epithelium

II. What is the function of salivary amylase

.....

III. a) Which blood vessels have a high concentration of nutrients in the liver?

.....

b) What are the minerals stored in the liver

.....

IV. Give three causes of Gastritis?

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.....
.....

V. What are the three layers of tissues found in heart wall

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.....

(B)

I. Write down the correct pathway of the electric impulse from the SA node to the apex of the myocardium

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.....

II a) What is a stroke?

.....
.....

b) Which receptor is sensitive to deep pressure?

.....

III. What is the name of the pathogen that causes tuberculosis?

.....

IV. What is an immunodeficiency disease?

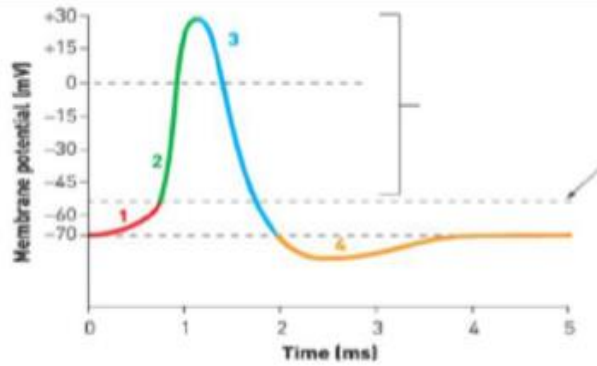
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V. Give two reasons why bony fishes produce ammonia as an excretory product

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(C)

I. Action potential phases are shown in the diagram



I. Name the phases?

- 1- 1. 1.....
- 2- 2.....
- 3- 3.....
- 4- 4.....

II. What are the two ways in which a signal terminates after the nerve impulse passes through the postsynaptic cell?

.....

III. What are semi-circular canals?

.....

IV. a) What is the function of thymosin

.....

b) What are the structures involved in making the placenta

.....

V. a) What are the major changes observed at the end of the second trimester in fetal development

.....

b) What are the common temporary birth control methods

.....

3. (A)

I. What are the major proteins in human milk?

.....

II. How is colostrum different than true milk?

.....

III. Name the two types of cells of the testes that produce hormones and give the secreted hormone from the above cells

.....
.....

IV. a) Name the kind of joint found in our elbow?

.....

b) What movements are permitted by the above joint?

.....

V. State one occasion when ATP molecule is hydrolyzed during muscle contraction?

.....

(B)

I. What do you understand by each of the following

Dihybrid cross –

.....
.....

Test cross –

.....
.....

II. Write Five characteristics of dominant trait with mendelian inheritance in human?

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.....
.....
.....
.....

III. What is the main factor of the genetic code that allows bacteria to produce human insulin?

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IV. a) Write the formation of peptide bond during elongation stage in translation process.

.....

b) What is the significance of formation of polysomes?

.....

V. Name the source organism that possess taq DNA?

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(C)

I. What is restriction map?

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.....

II. Give Five applications of PCR.

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.....
.....

Primary production

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.....

Food web

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.....

IV. Give four significances of mangrove

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.....
.....

V. Name one indigenous species in Srilanka?

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4. (A)

I. What are the impacts of human on biodiversity due to high population and development?

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.....

II. What are the five effects of global warming.

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.....
.....

III. a) Microorganism growth rate is very high. What is the reason for that?

.....

b) Name the free living nitrogen fixing bacteria?

.....

IV. Mention the suitable methods of sterilization of the following .

Nursery –

Surgical instruments –

V. What is virulence?

.....

(B)

I. Give two applications of microorganisms in environmental management.

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.....

II. Write the common genera of bacteria inhabiting rhizosphere?

.....

III. Give one water - borne disease in human.

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IV. Mention the Molds growth pH range?

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V. Write the steps of primary treatment of industrial waste water purification ?

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.....

(C)

I. What is the reason for the following colors appearing in aquarium side walls

- a) Green colour –
- b) Blue- green colour –

II. What is the main concept behind the tissue culture?

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III. Mention three vegetative propagation methods used in the floriculture industry.

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.....

IV. a) What are the initial symptoms of dengue fever?

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.....
.....

b) How to control dengue vector using Bti bacteria?

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c) What are the breeding habitat of dengue vector female mosquito?

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V. a) Give one application of blood stem cells

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b) What is the reason for the usage of stem cells in medical fields?

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Part B – ESSAY

Instructions:

- **Answer four questions only**

Draw clear labeled diagrams in suitable places.

(Each question carries 15 marks)

- 05) a) Explain the effective Carbon fixation path way in wheat plant, related its Anatomy.
b) Briefly Explain the Main steps involve photorespiration in C_3 Plants.
- 06) a) Draw, and fully labeled diagram of lower epidermal peel of dicot leaf.
b) Briefly explain the factors affect in transpiration.
- 07) a) Briefly describe the structure of Human skin
b) Explain the Homeostatic regulation of body temperature in Human.
- 08) Describe the process of DNA replication.
- 09) a) Explain the Ecological Pyramids found in an Ecosystem
b) Briefly explain heat sterilization Methods used in laboratory.
- 10) Write short Notes
a) Feeding Mechanism
b) Kingdom fungi
c) Tissue culture