

GENERAL SCIENCE, Paper - II

(Biological Science)

(English version)

Parts A and B

Time : 2 hours 45 min.]

[Maximum Marks : 40

Instructions :

1. In the time duration of 2 hours and 45 minutes, 15 minutes of time is allotted to read and understand the Question paper.
2. Answer the questions under **Part-A** on separate answer book.
3. Write the answers to the questions under **Part-B** on the Question paper itself and attach it to the answer book of **Part-A**.

Part - A

Time : 2 hours

Marks : 35

Instructions :

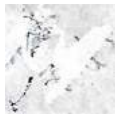
1. **Part-A** comprises of **three** sections I, II and III.
2. **All** the questions are **compulsory**.
3. There is no over all choice. However there is internal choice to the questions under section-III.

SECTION - I

- NOTE :**
1. Answer **all** the following questions. **7×1=7**
 2. Each question carries **1** mark.
 3. Write answers in 1 - 2 sentences for each question.

1. Write two examples for non-renewable resources.
2. Prepare two questions, which you ask the doctor to know more details about high blood pressure.
3. Write two slogans for campaign on Mal-nutrition.
4. Why do we call appendix as a vestigial organ ?

5. Write two secondary metabolites, which you use in your daily life.
6. What happens, if there is no peristaltic movement in Oesophagus ?
7. Identify the figure.



SECTION - II

- NOTE :** (i) Answer **all** the questions. 6×2=12
(ii) Each question carries **two** marks.
(iii) Answer the questions in 3 - 4 sentences.

8. Write two voluntary functions and two involuntary functions you have observed in your body.
9. Write two chemicals and two materials required to conduct the experiment "Heat and Carbon dioxide are evolved during anaerobic respiration".
10. When does Parthenogenesis occur ? Write names of two animals in which parthenogenesis takes place.
11. What happens if there is no evolution ?
12. Draw the figure of metaphase in mitosis, and write about it.
13. Observe the following table.

<i>Name of the phylum / organism</i>	<i>Excretory system / organ</i>
Protozoa	Diffusion
Porifera	Water bathes all their cells.
Platyhelminthes	Flame cells
Annelida	Nephridia
Arthropoda	Green glands
Reptiles, Aves and Mammals	Kidney

On the basis of above table, write answers to the following questions:

- (i) In above table, which living organisms contains kidneys as excretory organs like human beings ?
- (ii) Write the excretory organs present in Earthworm and Cockroach.

[3]

SECTION - III

- NOTE :** (i) Answer **all** the questions. 4×4=16
(ii) Each question carries **4** marks.
(iii) There is internal choice for each question. Only **one** option from each question is to be attempted.
(iv) Answer each question in 8 - 10 sentences.

14. Explain the process of coagulation of blood.

OR

Explain in brief any two evidences of Evolution.

15. Explain the Phytohormones which controls growth in plants.

OR

Explain the importance and implementation of community based interventions and farmer based interventions for water management.

16. Explain the procedure and precautions to prove "the presence of starch in leaves" experiment.

OR

Explain the procedure and observations of the experiment conducted to observe internal structure of the Kidney.

17. Observe the following table.

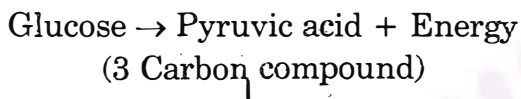
<i>Reproduction system</i>	<i>Organisms</i>
Fission	Paramecium, Bacteria
Budding	Yeast, Hydra
Fragmentation	Flatworms, Spirogyra
Rhizome	Ginger, Turmeric
Cutting	Rose, Hibiscus
Grafting	Citrus, Apple

On the basis of information given in the table write the answers to following questions.

- (i) Write the names of two organisms that show Asexual reproduction.
- (ii) Write two artificial vegetative propagation methods mentioned in the table.
- (iii) Write the names of two plants, which undergo natural vegetative propagation mentioned in the table.
- (iv) In fission, how many organisms can we get from one organism ?

OR

Observe the following.



Absence or low
amount of Oxygen
(Anaerobic respiration
and fermentation)



Lactic acid + Energy
Eg : Lactobacillus

Presence of Oxygen
(Aerobic respiration)

$\text{CO}_2 + \text{H}_2\text{O} + \text{Energy}$
Eg : Plants and
Animals



Ethanol + CO_2 + Energy
Eg : Yeast

Write the answers to the following questions.

- (i) How many Pyruvic acid molecules form from one Glucose ?
- (ii) What conditions influences Pyruvic acid to participate in Aerobic and Anaerobic respiration ?
- (iii) In which we get more energy in both Aerobic and Anaerobic respirations ?
- (iv) The chemical that is formed in human muscles during Anaerobic respiration.