

GENERAL SCIENCE - PAPER I & II

Time : 3 hrs , 15 min

Max.Marks : 100

Instructions:

1. This paper consists of **Part – A** and **Part – B**
 2. **Part – A** contains questions from Physical Science and **Part – B** contains from Biological Science.
 3. **Part – A** and **Part – B** contains 4 sections each.
 4. There are 33 Questions in the paper.
 5. There is an internal choice in **Section – IV** of **Part – A** and **Part – B**.
 6. Write all the questions visibility and legibly.
 7. 15 minutes are given for reading the question paper.
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PART - B - BIOLOGICAL SCIENCE

SECTION – I

Note : 1. Answer all the questions.

6x1=6

2. Each question carries 1 mark.

17. What are the valves present at the auricular-ventricular septum?
18. How do you appreciate the role of spinal cord in reflex action?
19. Draw a rough diagram of sperm cell?
20. Write two slogans on benefits of solar energy?
21. Name the type of circulatory system shown in the given figure and which animal can be seen?



22. Draw and label the female gametophyte in plants.

SECTION – II

Note : 1. Answer all the questions.

4x2=8

2. Each question carries 2 mark.

23. What are the important events that take place in chloroplast during photosynthesis?
24. Observe the following table that shows the human evolution chronology answer the questions given under the data.

Sl.No.	Human species	Lived/ appeared
1.	Homo Habilus	1.6 – 2.5 million years ago
2.	Homo erectus	1-1.8 million years ago
3.	Homo neanderthalensis	1,00,000-40,000 million years ago
4.	Homo Sapiens	15,000 – 10,000 million years ago

- a) Which human species lived before the present human species?
 - b) Who lived between 1-1.8 million years ago.
25. Write a brief note on analogous organs.
 26. Suggest measures to recycle water in your locality?

SECTION – III

Note : 1. Answer all the questions.

5x4=20

2. Each question carries 4 mark.

27. Analyse the table and answer the following questions.

Sl.No.	Human species	Lived/ appeared
1.	Cerebrum	Mental abilities, Memory, Speech
2.	Diencephalon	Sensory impulses, Emotional Impulses, Muscular activities
3.	Mid brain	Reflexes of Sight and hearing
4.	Cerebellum	Equilibrium
5.	Medulla oblongata	Respiratory, Cardiac centres, blood pressure

- i) Which part of the brain recollects the childhood incidents?
 - ii) Write two parts of hind brain
 - iii) Name the part of the Brain that will not function in drunken person.
 - iv) Name the part of the Brain that controls involuntary actions.
28. Draw a schematic diagram of villus in small intestine
29. Distinguish between central nervous system and peripheral nervous system.
30. How does gaseous exchange occur in lungs?
31. Name the important parts of the brain and write the functions of fore – brain.

SECTION – IV

Note : 1. Answer all the questions.

2x8=16

2. Each question carries 8 mark.

3. Each question has internal choice.

32. a) Write a short note on human lymphatic system and its functions.
(or)
b) Distinguish between asexual reproduction and sexual reproduction.
33. a) What are the hypothesis assumptions and outcomes of mendel's experiments with pea plant?
(or)
b) What is autonomous nervous system?

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PART - B - BIOLOGICAL SCIENCE

SECTION – I

Note : 1. Answer all the questions.

6x1=6

2. Each question carries 1 mark.

17. How do you appreciate the role of hormones in stomach that cause hunger alarming?
18. Name the factors for photosynthesis?
19. What does it represent?

$\frac{\text{♀}}{\text{♂}}$	Y	y
Y	YY	Yy
y	Yy	yy

20. What is the relationship between blood and plasma.
21. What are lenticels ? Write its functions.
22. What will happen if a plant is placed near the window of your classroom?

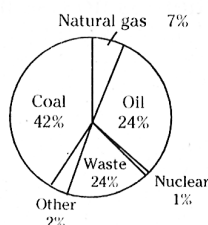
SECTION – II

Note : 1. Answer all the questions.

4x2=8

2. Each question carries 2 mark.

23. What may happen if we remove producers from a food chain?
24. Observe the pie diagram and answer the following questions.



- i) Identify the fossil fuels from the above diagram.
 - ii) Why wastes should be considered as primary energy source in future?
25. What happens if delivery ducts are closed?
 26. Complete the following table.

Hormone secreted in stomach	Functions

SECTION – III

Note : 1. Answer all the questions.

5x4=20

2. Each question carries 4 mark.

27. There is a great variety in diversified life process, express your feelings in the form as a poem.
28. What is a coagulation of Blood? Explain the process of coagulation of Blood in brief.
29. Explain the Darwin's theory. Of 'Natural selection with an example.
30. Draw a neat labeled diagram of the Functional unit of kidney. Write main function of Glomerulus.
31. Distinguish between central nervous system and peripheral nervous system.

SECTION – IV

Note : 1. Answer all the questions.

2x8=16

2. Each question carries 8 mark.

3. Each question has internal choice.

32. a) Write the darwin's theory of evolution in a nut shell.
(or)
b) Explain various steps in the mechanism of urine formation.
33. a) What is peristaltic movement? Compare the similarity of bolus movement in oesophagus with cycle tube and potato experiment which you have conducted in school.
(or)
b) Describe an experiment to demonstrate root pressure in plants.

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PART - B - BIOLOGICAL SCIENCE

SECTION – I

Note : 1. Answer all the questions.

6x1=6

2. Each question carries 1 mark.

17. What does the following equation represent?

$$C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + \text{Energy}$$
18. Write any one similarity between xylem and phloem.
19. What happens if both kidneys fail completely?
20. What happens if the fallopian tubes are partially blocked and the ovulated eggs are prevented from reaching the uterus?
21. What happens if the direction of peristalsis is not reversed in animal like cow?
22. Suggest any two activities to check soil erosion in your school.

SECTION – II

Note : 1. Answer all the questions.

4x2=8

2. Each question carries 2 mark.

23. You want to know more information about harmful effects of using chemical pesticides in agriculture. What questions will you ask to an agronomist?
24. What happens to the rate of photosynthesis, if CO_2 concentration is kept increased continuously?
25. Observe the following table and answer the questions given below.

Alkaloid	Name of the plant	Uses
Quinine	Cinchona	Anti Malarial drug
Nicotine	Tobacco	Pesticides
Morphine	Opium	Pain killer
Pyrethroids	Chrysanthemum Species	Insecticides

- i) Which alkaloid we get from the fruit, is used as pain killer?
- ii) From which part of the plant do we get guanine?
26. What is “Bio diversity”? What is its importance?

SECTION – III

Note : 1. Answer all the questions.

5x4=20

2. Each question carries 4 mark.

27. Suggest any three programmes for prevention as soil pollution in view of avoiding pesticides.
28. What is the role of epiglottis and diaphragm in respiration?
29. What is the function of peristalsis in these parts of human digestive system?
a) Oesophagus b) Stomach c) Small intestine d) Large intestine
30. Draw a neat labeled diagram of internal structure of leaf. Which mesophyll cells the leaf consists of chloroplast?
31. B1, B2, B3, A, C, D,E, K are the symbols of vitamins classify these vitamins based on solubility and diseases due to vitamins deficiency.

S.No.	Water Soluble	Disease due to deficiency	FAT Soluble	Disease due to deficiency?

SECTION – IV

Note : 1. Answer all the questions.

2x8=16

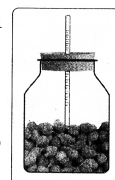
2. Each question carries 8 mark.

3. Each question has internal choice.

- 32.a) What procedure do you follow to understand anaerobic respiration in your laboratory?
(or)

- b) What materials are required to prove that oxygen is produced during photosynthesis. Explain the procedure you adopted?

- 33.a) i) What change did you observe in the thermometer in the given experiment?
ii) Where does the heat come from
iii) What result you will get if you perform this experiment with dry seeds?
iv) What are the apparatus used in this experiment ?



(or)

- b) Write about the experiment conducted by Ivan Pavlov on conditioned reflex.