

GENERAL SCIENCE, Paper - II

(Biological Science)

(English version)

Parts A and B

Time : 2 hours 45 min.]

[Maximum Marks : 40

Instructions :

1. 15 minutes allocated to read the question paper 2.30 hours allocated to write answer.
2. **Part-A** consists of **three** sections and **Part-A** must be answered in a separate sheet. Write the answers to the questions under **Part-B** on the question paper itself and attach it to the answer book of **Part-A**.
3. Answer all the questions. Internal choice to the questions is given under Section-III.

Part - A

Time : 2 hours

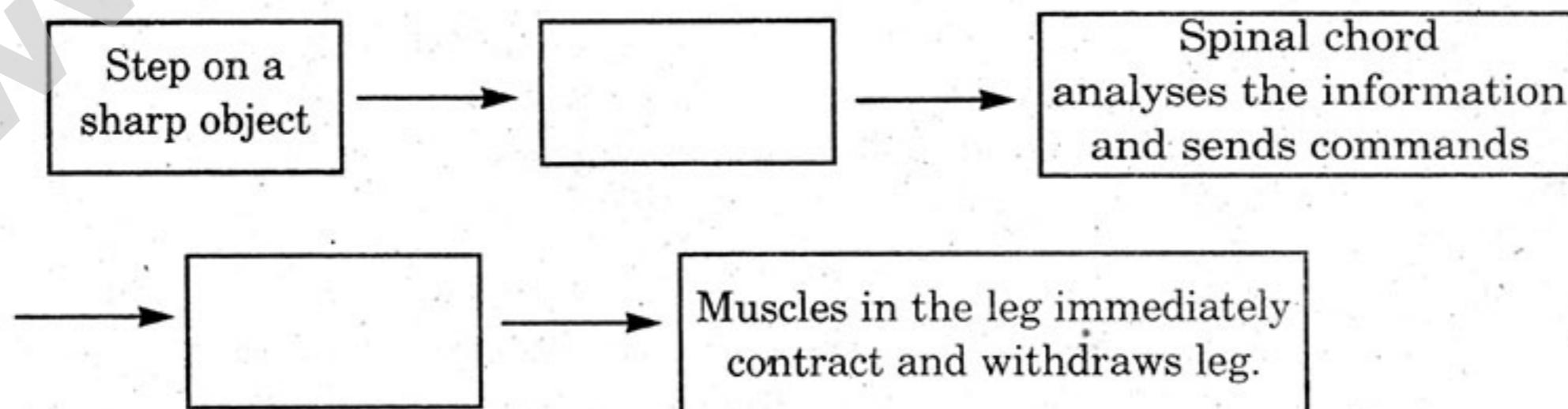
Marks : 30

SECTION - I

- NOTE :** (i) Answer the following questions.
(ii) Each question carries **ONE** mark.

4×1=4

1. Bhumika told that "If there were no green plants, all life on the earth would come to an end". Comment.
2. Fill in the missing sections in the following flow chart.



3. Complete the following table.

Hormones secreted in stomach	Functions

4. Recently a new programme was launched in our state known as "Vanam - Manam"; Prepare any two slogans to promote the programme.

SECTION - II

NOTE : (i) Answer the following questions.

5×2=10

(ii) Each question carries **TWO** marks.

5. Fill in the table on the basis of your observations in field trip.

S. No.	Name of the plant	Secondary metabolites	Uses
A.	Neem		
B.	Datura		

6. A doctor visited your school to check up the health of school children. What kind of questions do you ask to know about the pancreas ?

7. What happens if salivary ducts are closed ?

8. Two kidneys are present in human beings as excretory organs. Haritha, whose age is 23 years, donated one kidney to her father. Now she has one kidney only. She gave birth to a female child.

(a) How many kidneys are there in Haritha's daughter ?

(b) Support your answer.

9. Proper utilisation of natural resources is the way to show gratitude to our nation. Can you support this statement? Give your argument.

SECTION - III**NOTE :** (i) Answer the following questions.

4×4=16

(ii) Each question carries **FOUR** marks.

10. (A) Organisms reproduce asexually in many ways. Some of the organisms are given below. Fill the below table based on the collected information about the organism and mode of asexual reproduction in it.

- (a) Onion (b) Spirogyra (c) Strawberry (d) Ginger
 (e) Honey-bee (f) Paramecium (g) Planaria (h) Yeast

Name of the organism	Mode of Asexual reproduction

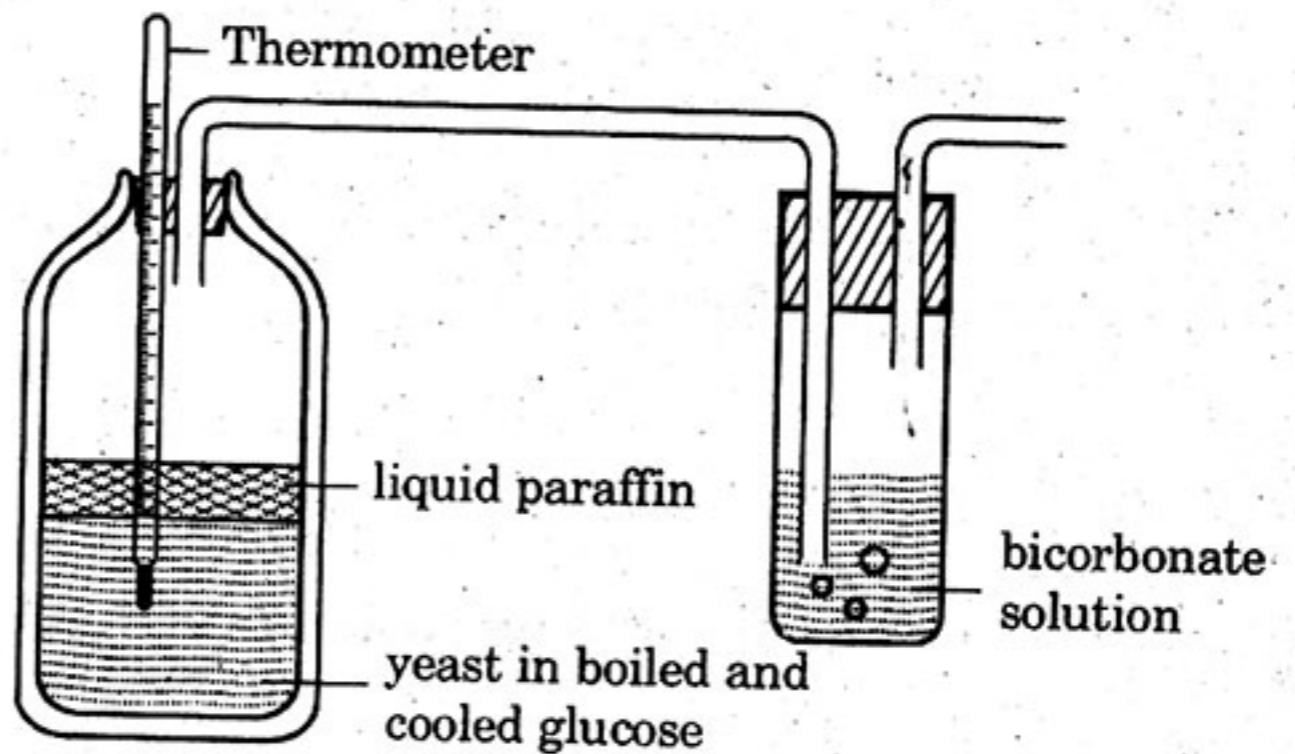
OR

(B) 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.

Sl. No.	Water soluble	Disease due to deficiency	Fat soluble	Disease due to deficiency

11. (A) You have conducted this experiment in your class room. Now answer the following questions.

- (a) What do you prove by conducting this experiment?
 (b) Why do you heat glucose solution?
 (c) How do you confirm that glucose solution is free from oxygen after heating it?



(d) What are the changes you noticed in the lime water ?

OR

(B) To study the internal structure of the mammalian heart you have observed the longitudinal section of sheep heart in your lab. Now answer the following questions.

- (a) Is the thickness of the wall of the heart is uniform throughout ?
 (b) How many chambers are there in the heart ? What are they ?
 (c) How are the chambers connected to each other ? How are they separated ?
 (d) How is the heart protected from mechanical shocks ?

12. (A) What is the function of peristalsis in these parts of Human digestive system ?

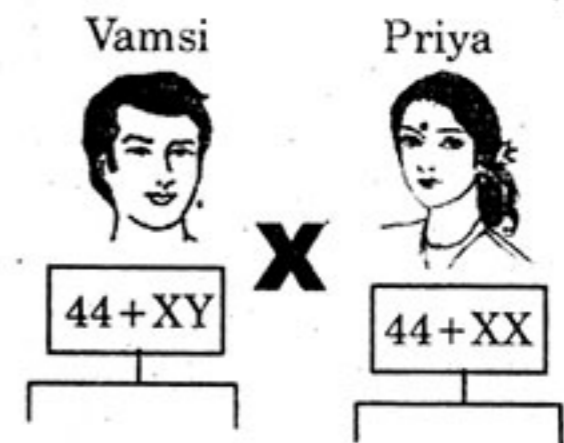
- (a) Oesophagus (b) Stomach
 (c) Small intestine (d) Large intestine

OR

(B) Explain the mechanism of entry of water into root hair by osmosis with the help of a diagram.

13. (A) Observe the diagram and answer the following questions. Vamsi and Priya are newly married couple. They want to give birth to a male child.

- (a) Draw a probable diagram showing transfer of chromosomes from parents to give birth to Male child.
 (b) Who determines the sex of the baby ?
 How can you say ?



OR

(B) Suggest any four eco-friendly methods for prevention of soil pollution in view of avoiding pesticides.

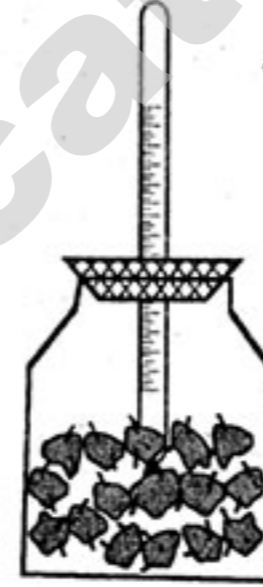
[2]

16. Example for parasitic plant is []
- (A) Cuscuta (B) Hibiscus
(C) Bitter guard (D) Jasmine

17. In the light reaction, light energy is converted into chemical energy, photolysis of water, and CO_2 is converted into glucose. All these relations takes place in []
- (A) Mitochondria (B) Ribosomes
(C) Chloroplast (D) Lysosomes

18. Vamsi conducted the experiment shown in the diagram. The temperature in thermometer rises. Aim of this experiment is []

- (A) CO_2 is evolved during germination.
(B) Heat is evolved during respiration.
(C) Alcohol is evolved during respiration.
(D) CO_2 is evolved during respiration.



19. The process shown in the diagram. []



- (A) Transpiration (B) Photosynthesis
(C) Respiration (D) Nutrition

20. Match the following. []

List - I

1. Atrial contraction
2. Ventricular contraction
3. Cardiac cycle

- (A) 1-b, 2-a, 3-c
(C) 1-c, 2-a, 3-b

List - II

- a. 0.27 - 0.35 sec.
- b. 0.8 sec.
- c. 0.11 - 0.14 sec.

- (B) 1-b, 2-c, 3-a
(D) 1-c, 2-b, 3-a

[3]

21. Choose the correct path-way of urine. []
- (A) Kidneys → ureters → urinary bladder → urethra
 (B) Ureters → urinary bladder → urethra → kidneys
 (C) Urinary bladder → urethra → kidneys → ureters
 (D) Urethra → kidneys → ureters → urinary bladder
22. A person has loss of control on emotions. Which part of the brain is responsible for this? []
- (A) Cerebrum (B) Medulla oblongata
 (C) Mid brain (D) Cerebellum
23. Which of the following seeds have endosperm? []
- (A) Castor (B) Pea
 (C) Red gram (D) Green gram
24. Arrange the sequence of steps of human life cycle. []
1. Adolescence 2. Babyhood 3. Adulthood 4. Childhood
- (A) 1, 3, 4, 2 (B) 4, 2, 3, 1
 (C) 2, 4, 1, 3 (D) 3, 1, 2, 4
25. This symbol denotes []



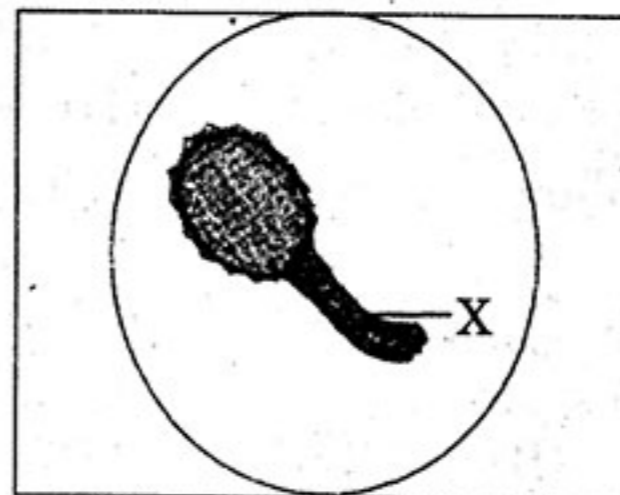
Red ribbon
December 1st

- (A) World AIDS Day (B) World DOCTORS' Day
 (C) World HEALTH Day (D) World RED CROSS Day

26. The student observes pollen grains under microscope. It appears as below.

'X' indicates

- (A) Matured nucleus
 (B) Pollen tube
 (C) Stigma
 (D) Tube cell



[4]

27. Human dental formula is []

- (A) $\frac{2}{2}, \frac{1}{1}, \frac{2}{2}, \frac{3}{3}$ (B) $\frac{1}{1}, \frac{2}{2}, \frac{3}{3}, \frac{1}{1}$ (C) $\frac{3}{3}, \frac{2}{2}, \frac{2}{2}, \frac{1}{1}$ (D) $\frac{2}{2}, \frac{2}{2}, \frac{1}{1}, \frac{3}{3}$

28. Which of the following statement is not true ? []

- (A) Malthus theory was written in 'An essay on the principles of population'.
 (B) The 'Origin of species' was written by Charles Lyell.
 (C) The theory of 'Natural Selection' was proposed by Charles Darwin.
 (D) Jean Baptist Lamarck proposed a theory of 'Inheritance of acquired characters'.

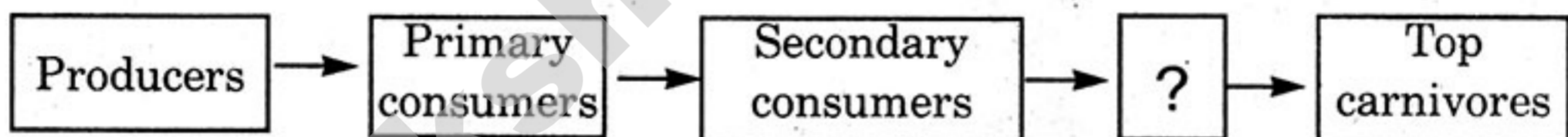
29. What is genotypic ratio of monohybrid cross between homozygous tall pea plant with homozygous dwarf pea plant ? []

- (A) 2 : 1 : 1 (B) 1 : 1 : 2 (C) 1 : 2 : 1 (D) 2 : 2 : 1

30. Ban all pesticides, this means that []

- (A) Control on usage of pesticides.
 (B) Prevention of pesticides.
 (C) Promote eco-friendly agricultural pesticides.
 (D) Stop bio-chemical factories.

31. Choose the right one for the empty box. []



- (A) Grasshopper (B) Snake (C) Frog (D) Hawk

32. Fill the empty box choosing the right one from the following. []

Type of pyramid	Base
Pyramid of number	Number of organisms
?	Amount of energy

- (A) Geographical pyramid (B) Pyramid of energy
 (C) Pyramid of bio-mass (D) Giza pyramid

33. Which of the following practice is suitable for farmers with less water resources ? []

1. Select short term crops. 2. Cultivate commercial crops.
 3. Adopt drip system. 4. Crop holiday.

- (A) 1, 3 (B) 2, 3 (C) 1, 4 (D) 3, 4