



**the srijan school**

**SUBJECT: SCIENCE**

**CLASS: X**

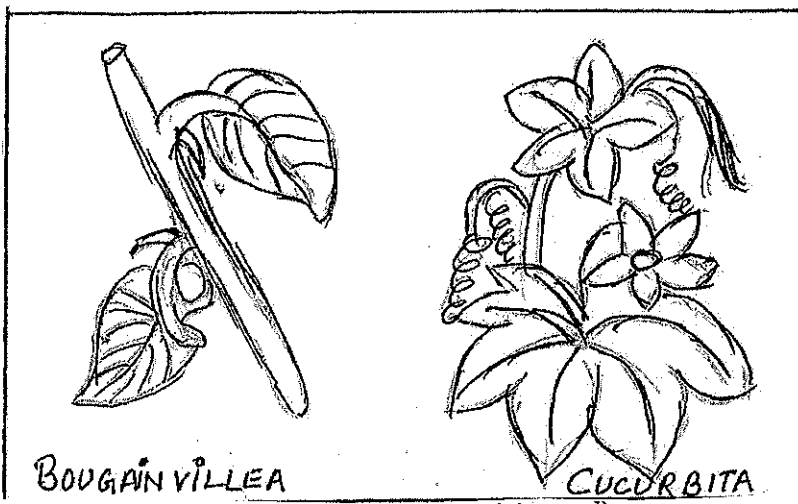
**REVISION WORKSHEET**

**CHAPTER: HEREDITY AND EVOLUTION**

1. Name the scientist who studied inheritance of traits in pea plant.
2. Give three major processes which will result in causing speciation in two sub populations.
3. Shibu's father is a wrestler and has a robust body. He was also awarded as Mr. India when he was young. Shibu is his only child. As shibu grew older, everyone expected him to have the same body built as his father. But he is thin. His friends tease him and shibu feels sad.
  - a. Is it true that a wrestler's son should also have heavy muscles?
  - b. What type of character is it- acquired or inherited?
  - c. If you are shibu's friend, how will you convince him that he is normal?
4. Define variation in a species? Distinguish between acquired and inherited traits with an example of each.
5. Identify as homologous or analogous with reasons:
  - a. Pectoral fins of a fish and forelimbs of a horse.
  - b. Wings of a bird and wings of a butterfly
  - c. Wings of a bat and wings of a cockroach
  - d. Forelimbs of a bird and wings of a bat.
6. Explain how evolutionary relationships can be traced by the study of homologous organs.
7. What are fossils? State their importance in the study of evolution with the help of a suitable example.
8. "Only variations that confer an advantage on an individual organism will survive in a population." Justify this statement.
9. Explain that it is a matter of chance whether a couple will have a boy child or a girl child.
10. How is the sex of the child fixed during the fertilization step in human beings? Explain.
11. The sex of a newborn child is a matter of chance and none of the parents may be considered responsible for it. Justify this statement with the help of flow chart showing determination of sex of a newborn.
12. The Government of India legalized medical termination of pregnancy to help in cases of medically complicated pregnancies. But the provision is being misused for female foeticide after a sonography. Suggest three measure to educate the society to prevent female foeticide.
13. If a pure tall pea plant is crossed with a pure dwarf pea plant, then in  $F_1$  generation only tall plants appear.
  - a. What happens to the traits of the dwarf plant?
  - b. In the second generation, the dwarf trait reappears. Why?
14. Explain with the help of example how variation is useful for survival of species over time?
15. Write the contribution of Charles Darwin in the field of 'evolution'.
  - a. Define variation
  - b. Why sexual reproduction produces more variations than asexual reproduction?

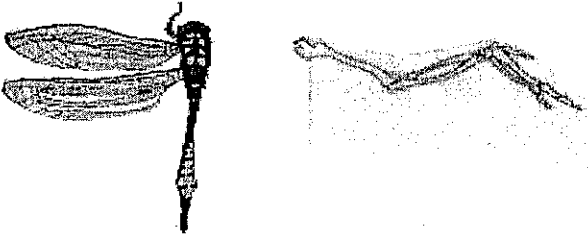
- c. Give one reason to explain why are variations beneficial to the species?
- 16.
- State Mendel's laws of inheritance.
  - Briefly explain the process of carbon dating to obtain age of fossils.
- 17.
- Give the evidence that the birds have evolved from reptiles.
  - Insects, octopus, planaria and vertebrates possess eyes. Can we group these animals together on the basis of eyes that they possess?  
Justify your answer giving reason.
- 18.
- Mendel in one of his experiments with pea plants crossed a variety having round seeds with one having wrinkled seeds. Write his observations, giving reasons of  $F_1$  and  $F_2$  progeny.
  - List any two contrasting characters other than roundness of pea plants that Mendel used in his experiments with pea plants.
19. Give the respective scientific terms used for studying:
- The mechanism by which variations are created and inherited
  - The development of new type of organisms
20. All the variations in a species do not have equal chances of survival. Why?
21. What are the two types of variations?
22. How do species of two isolated subpopulations become two different species?
23. Give reasons for the following:
- Traits acquired during lifetime of an individual are not inherited.
  - All the human beings belong to a single species.
  - Variations keep on accumulating during reproduction, and do not disappear in next generation
24. What are fossils? How is life of a fossil estimated?
25. Explain with the help of an example each, how the following provide evidences in favour of evolution:
- Homologous organs
  - Analogous organs
  - Fossils
26. How do Mendel's experiments show that
- Traits may be dominant or recessive?
  - Inheritance of two traits is independent of each other? Charles Darwin came up with the idea of evolution of species by natural selection. How Mendel's experiments support Darwin's view?
27. What are ammonite and trilobite?
28. Genotype of Rhode Island Red variety of poultry bird is denoted as RR and that of White Leghorn as rr. When these two are crossed,
- What variety of bird do you expect in their  $F_1$  progeny?
  - Give the percentage of White Leghorn, if  $F_1$  birds are doing natural insemination.
  - In what ratio would you find the genotypes RR and Rr in  $F_2$  progeny?

29.



Which part of a Cucurbita plant is homologous to thorn in Bougainvillea plant ?

30



- (a) Which type of organs are shown in the figure above ?
- (b) Which type of origin and structure do these organs have ?

31(a)

Four students P, Q, R and S differently reported the following set of organs to be analogous :

- P. Forelimb of a frog and forelimb of a lizard
- Q. Forelimb of a bird and forelimb of a human
- R. Wings of a parrot and wings of a butterfly
- S. Wings of a bird and wings of a bat

The two students who have reported correctly are :

- (A) P and Q
- (B) Q and R
- (C) R and S
- (D) P and S

(b) You have potato, carrot, radish, sweet potato, tomato and ginger bought from the market in your jute bag. Identify two vegetables to represent the correct homologous structures.

- (A) Potato and tomato
- (B) Carrot and tomato
- (C) Potato and sweet potato
- (D) Carrot and radish

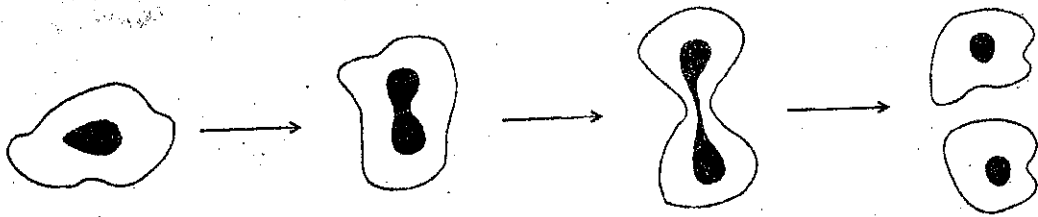
Study the different conclusions drawn by students of a class on the basis of observations of preserved / available specimens of plants and animals.

- I. Potato and sweet potato are analogous organs in plants.
- II. Wings of insects and wings of birds are homologous organs in animals.
- III. Wings of insects and wings of bats are analogous organs in animals.
- IV. Thorns of citrus and tendrils of cucurbita are analogous organs in plants.

The correct conclusions are :

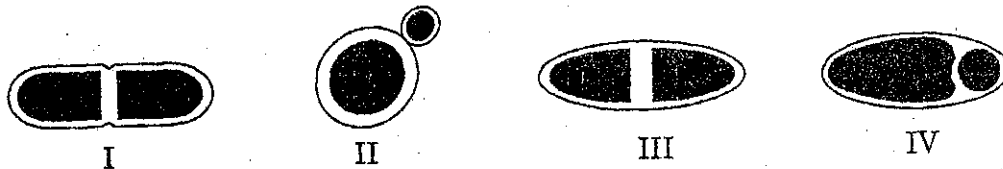
- (A) I and II
- (B) II and IV
- (C) I and III
- (D) III and IV

33 (a) The process represented in the given diagram is



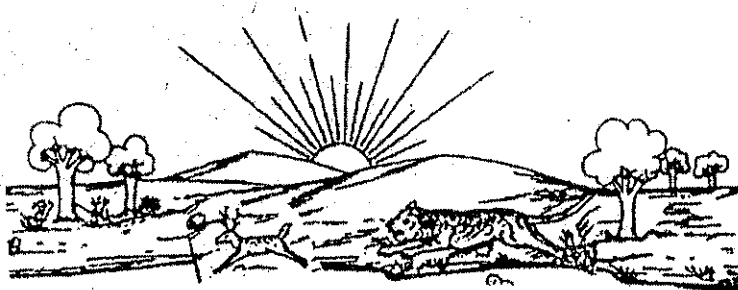
- (A) formation of bud taking place in Amoeba
- (B) formation of daughter cells in Amoeba
- (C) identical gametes being formed in Amoeba
- (D) formation of spores in Amoeba

(b) The budding in yeast is illustrated by the following diagram :



- (A) I
- (B) II
- (C) III
- (D) IV

34. Given below is a picture of an ecosystem. Identify any two biotic components and any two abiotic components of this ecosystem.



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**REVISION WORKSHEET**  
**CHAPTER: OUR ENVIRONMENT**

1. Why is decrease of ozone in our ozone layer a cause for worry?
2. Why are bacteria and fungi called decomposers?
3. Define:
  - a. biomass
  - b. anaerobic degradation
4. Select the biodegradable items from the list: polythene bags, old clothes, wilted flowers, pencil shavings, glass bangles, bronze statue, vegetable peels
5. Mention the purpose of ozone shield in atmosphere.
6. Mention two ways by which industrial waste is polluting the environment.
7. We often observe domestic waste decomposing in the by-lanes of residential colonies. Suggest ways to make people realise that the improper disposal of waste is harmful to the environment.
8.
  - a. What is an ecosystem? List its two main components.
  - b. We do not clean ponds or lakes, but an aquarium needs to be cleaned regularly. Explain.
9. List two environment friendly practices or habits which need to be followed by every member of a family/ community. Explain how these practices will support the "Save the Environment" mission.
10. "Affluent life style has a negative effect on the environment." Justify this statement with the help of an example.
11. Our food grains such as wheat and rice, the vegetables and fruits and even meat are found to contain varying amounts of pesticide residues. State the reason to explain how and why it happens.
12. Why is government of India imposing a ban on the use of polythene bags?
13. Suggest two alternatives to these to these bags and explain how this ban is likely to improve the environment.
14. List two products of combustion of fossil fuels other than carbon dioxide. What happens when combustion takes place in insufficient air? Name a greenhouse gas.
15. What is meant by food chain? "the number of trophic levels in a food chain is limited." Give reason to justify this statement.
16. Larger animals kill the smaller animals in the forest, eat whatever they can, leave the rest in the forest but the forest is never found full of dead animals. What happens to the bodies of these dead animals?
17. Your school was awarded most eco-friendly school award due to the efforts of eco-club of your school.
  - a. List any two activities of eco club that might have helped win this award.
  - b. Mention any two values displayed by members of eco club
18. Name the organism(s) belonging to fourth trophic level in the food chain comprising of:

Snakes, insects, frogs, plants, hawks

19. Why should fossil fuels be used judiciously? Write any two reasons.
20. Why is lake considered to be a natural ecosystem?
21. You have been selected to talk on "ozone layer and its protection" in the school assembly on the environment day.
  - a. Why should ozone layer be protected?
  - b. List any two ways that you would stress in your talk to bring in awareness amongst your fellow friends that would also help in protection of ozone layer as well as the environment.
22. Producers always occupy the first trophic level in any food chain. Justify the statement.

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**CHAPTER: MANAGEMENT OF NATURAL RESOURCES**

1. Give two advantages of watershed management.  
OR  
List and explain any two advantages associated with water harvesting at the community level.
2. What is the role of wild life and nature enthusiasts as stakeholders with reference to the forests.
3. What is equitable distribution of resources in a society and why is it necessary? State any two factors which work against an equitable distribution of resources.
4. Quote three instances where human intervention saved the forests from destruction.
5. How did the Chipko Andolan ultimately benefit the local population? Give two benefits.
6. State the causes of Chipko Movement.
7. Construction of large dams has led to many problems. Justify the statement.
8. "We need to manage our resources." List two reasons to justify this statement.
9. List any two measures that you suggest for better management of water resources.
10. Water is a valuable resource. List two ways that you would suggest every family member to save it.
11. What is meant by biodiversity? List two advantages of conserving forest and wildlife.
12. List two advantages of building dams.
13. Give two uses of bamboo for local people.
14. Name the three "R"s to save environment. Explain any one with the help of one example.
15. How do advantages of exploiting natural resources with short term gains in mind differ from the advantages of managing our resources with a long term perspective?
16. What is meant by wildlife? How is it important for us?
17. Compare reuse and recycle methods for the conservation of the environment.