* **Choose The Right Answer From The Given Options.** [12]

1. Which of the following statement is incorrect?
   (A) Cell is the structural unit of living things
   (B) Living and non-living things are made up of cells
   (C) Living and non-living things are made up of matter
   (D) Similar cells combine together to form tissues.

   Ans. : (B) Living and non-living things are made up of cells

2. Animals move
   (A) to search their food (B) to search for shelter
   (C) to escape from their enemies (D) all of these

   Ans. : (D) all of these

3. Energy is released during the process of
   (A) digestion (B) excretion (C) growth (D) respiration

   Ans. : (D) respiration

4. Which of the following is true for plants and animals?
   (A) They make their own food
   (B) They need sunlight for energy
   (C) They respire to get energy
   (D) They move from one place to another

   Ans. : (C) They respire to get energy

5. Which of the following does not grow?
   (A) Tree (B) eraser (C) baby (D) butterfly

   Ans. : (B) eraser

6. Which of the following is not a product of excretion?
   (A) Carbon dioxide (B) energy (C) urine (D) sweat

   Ans. : (B) energy

7. The germination of pea seeds requires one of these gases.
   (A) nitrogen (B) oxygen (C) vapours of water (D) hydrogen

   Ans. : (B) oxygen

8. Which is not a requirement for germination of a seed?
   (A) favourable temperature (B) light
   (C) fertilizer (D) sufficient moisture

Ans. : (C) fertilizer

9. The process of plants creating their own food is called?

(A) Germinate (B) Nutrients (C) Photosynthesis (D) Plant life

Ans. : (C) Photosynthesis

10. Jagadish Chandra Bose born in

(A) 1858 (B) 1859 (C) 1857 (D) 1860

Ans.: (A) 1858

11. The process in which some organisms change form in different stages of their life cycle is known as

(A) Life span (B) Germination (C) Metamorphosis (D) Reproduction

Ans. : (C) Metamorphosis

12. An organism that is fully grown is called

(A) A pupa (B) A larva (C) An adult (D) A nymph

Ans. : (C) An adult

*** Fill In The Blanks With Correct Alternative.** **[6]**

13. Living beings need _____ for their growth and development.

Ans. : nutrition

14. The tiny _____ inside a seeds develops into a plant.

Ans. : embryo

15. The process of _____ maintains the continuity of a kind of an animal.

Ans. : reproduction

16. The _____ transforms into an adult mosquito.

Ans. : pupa

17. All living beings respond to _____

Ans. : stimuli

18. Tiny pores called _____ help plants to respire.

Ans. : stomata

*** State Whether The Sentences Are True Or False.[1 Marks Each]** **[5]**

19. Anything that prompts living beings to respond is called stimulus.

Ans. : True

20. Growth is not a characteristic of living beings.

Ans. : False

21. Insectivorous plants are dependent on other plants for their nutrition.

Ans. : False

22. Opening of flowers is an example of movements in plants.

Ans. : True

23. Mosquitoes breed in stagnant water.

Ans. : True

*** Answer The Following Questions In One Sentence.[1 Marks Each]** **[29]**

24. What is movement?

Ans. : Movement can be defined as the act of changing physical position or location. It involves going from one place to another.

25. Do plants show any kind of movement?

Ans. : No, plants do not show any kind of movement.

26. What are insectivorous plants?

Ans. : Insectivorous plants, are special plants that catch insects and digest them to get nutrients.

27. Write the examples of insectivorous plants.

Ans. : Venus fly trap, pitcher plant, and sundews.

28. What is growth? Or Define growth.

Ans. : Growth is the process of increasing in size, mass or overall development.

29. Define nutrition.

Ans. : Nutrition is the process by which organisms obtain and utilize nutrients from food for growth development and energy.

30. What is respiration?

Ans. : Respiration is the process by which organisms take in oxygen and release carbon dioxide to obtain energy from food.

31. What is excretion?

Ans. : Excretion is the process by which waste is removed from body. Urine, sweat and salts are called excretion

32. Define stimulus.

Ans. : Anything or any event that prompt living beings to respond is called a stimulus.

33. What is reproduction?

Ans. : Reproduction is the process of producing new ones of one's own kind.

34. What is germination?

Ans. : Germination is the process by which a seed develop into a new plant.

35. Write the essential things / condition required for seed germination.

Ans. : The essential things / condition required for seed germination:
(1) Water
(2) Air and soil
(3) Light and/or dark condition

36. How do plants respond to sunlight?

Ans. : The plants respond to sunlight because its parts move towards the sunlight due to phototropism.

37. What is geotropism movement in plants?

Ans. : Geotropism means – The movement of roots in plant towards the gravity.

38. What is tropism in plant?

Ans. : Tropism in plants is when they respond to external stimuli or by growing or movement in certain way.

39. Write the types of tropism.

Ans. : Types of tropism are:
(1) Phototropism: Movement towards sunlight
(2) Geotropism: Movement towards gravity
(3) Hydrotropism: Movement towards water
(4) Chemotropism: Movement towards chemicals
(5) Thigmotropism: Movement towards touch or external stimuli.

40. What is life cycle of a plant?

Ans. : The entire process from a seed to a plant and then to the next generation of seeds is called the life cycle of a plants.

41. What is seed?

Ans. : A seed is a small hard structure that contain a baby plant inside it.

42. What is flower?

Ans. : A flower is a part of plant that make seed/fruit after pollination.

43. Write the stages in plant during life cycle of the plant.

Ans. : Stages in plants:
(1) Seed
(2) Seed germination
(3) Appearance of leaves
(4) Appearance of flower
(5) Appearance of fruits.

44. How long does it take for a tadpole to frog?

Ans. : Time it takes for a newly hatched tadpole to become a frog is around 14 weeks.

45. What are frog eggs called?

Ans. : The jelly like substance that is a cluster of eggs of a frog is known as spawn.

46. What is metamorphosis?

Ans. : The development of larvae (an immature form that hatches from an egg) to the adult form is metamorphosis.

47. Do frogs live in the water or on land?

Ans. : Frogs can live both on land and in water. Amphibians replaced gills with another respiratory organ, the lungs, in order to live on land.

48. Give two examples for each:
Linear motion

Ans. : Linear motion: (a) Rolling of ball on ground, (b) Moving of bicycle on road,

49. Give two examples for each:
Circular motion

Ans. : Circular motion: (a) Rotation of fan, (b) Bicycle wheel.

50. How would you now categorise a seed, as living or non¬living?

Ans. : Seed is a living thing. Seed can grow into a plant under right conditions.

51. You have learnt that different conditions are required for seed germination. How can we use this knowledge for proper storage of grains and pulses?

Ans. : To ensure proper storage of grains and pulses and prevent germination:
→ Keep Dry
→ Cool Storage
→ Airtight Containers

52. You have learnt that a tail is present in a tadpole but it disappears as it grows into a frog. What is the advantage of having a tail in the tadpole stage?

Ans. : → The tail in the tadpole stage of a frog provides
→ Swimming Ability: It helps the tadpole swim efficiently in water to find food and escape predators.
→ Balance and Stability: Assist in maintaining balance while moving in water.

*** Answer The Following Questions In Short.[2 Marks Each]** **[10]**

53. Write short note on forglet.

Ans. : When the tadpole reaches the forglet stage, it is almost a full adult. At this point, the tadpole's gills have disappeared, and its lungs have enlarged. This means it is ready to leave the water and live on land. Once its tail disappears, it will become an adult frog.

54. How can the life cycle of a mosquito be disrupted?

Ans. : Larvicides (a substance used to kill larvae) target larvae in the breeding habitat before they can mature into adult mosquitoes and disperse. Larvicide treatment of breeding habitats helps reduce the adult mosquito population in nearby areas.

Liquid larvicide products are applied directly to water using backpack sprayers and truck or aircraft-mounted sprayers. Tablet, pellet, granular, and briquet formulations of larvicides are also applied by mosquito controllers to breeding areas.

55. Charan says that a wooden log is non-living as it cannot move. Charu counters it by saying that it is living because it is made of wood obtained from trees. Give your arguments in favour or against the two statements given by Charan and Charu.

Ans. : → Against Charan: The wooden log was once part of a living tree, which was alive and exhibited characteristics of living beings.

→ Against Charu: Once the wood is separated from the tree, it no longer exhibits growth, reproduction, or other life processes, making it non-living.

56. A plant is provided with all the conditions suitable for its growth (Fig. below). Draw what you expect to see in the shoot and the root of the plant after one week. Write down the reasons.

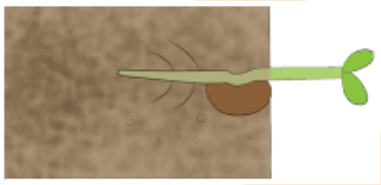


Fig: Pot kept along the ground

Ans. : Expected observations

→ Shoot: Growth upwards, towards the light source.

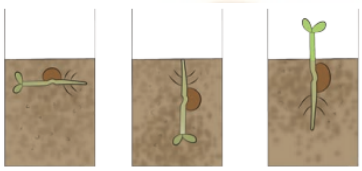
→ Root: Growth downwards, into the soil for stability and nutrient absorption.

Reasons

→ Shoots grow towards light (phototropism) for photosynthesis.

→Roots grow downwards (gravitropism) for – nutrient absorption

57. Tara and Vijay set up the experiment' shown in the picture (Fig. below). What do you think they want to find out? How will they know if they are correct?



Experimental set-up

Ans. : Tara and Vijay are likely trying to understand how the orientation of a seed affects the growth direction of the shoot (the green ^art above ground) and the root

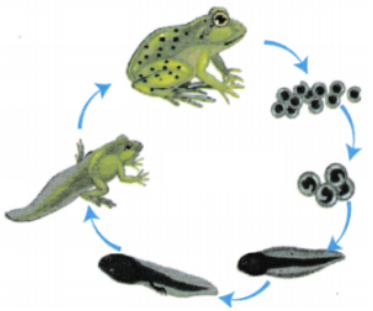
(the part below ground).

Observation: If the shoot always grows upwards (towards the light) and the root always grows downwards (into the soil), regardless of how the seed is placed, this shows that plants have natural mechanisms (like phototropism and gravitropism) that guide their growth direction.

*** Answer The Following Questions In Brief.** **[12]**

58. Explain the life cycle of a frog.

Ans. : The life cycle of a frog begins with a fertilized egg. The fertilized egg develops into a tadpole. The fertilized egg and tadpole stages are found in the water in the spring. The tadpole develops into an immature froglet, then it is transformed via the process of metamorphosis into an adult frog. The tail is absorbed and the external gills are replaced by lungs. The adult frog lives on land and in the water and breathes air.



59. List the similarities and differences in life cycles of plants and animals.

Ans. :

Similarities in Life Cycles of Plants and Animals	Differences in Life Cycles of Plants and Animals
(i) Development Stage: Both have distinct stages of development (e.g., germination, flowering in plants; egg, larva, adult in animals).	(i) Respiration: While both respire, the mechanisms differ; animals use lungs or gills, plants use stomata and lenticels.
(ii) Growth: Both plants and animals grow from a small initial stage (seed or embryo) into a mature form.	(ii) Growth Patterns: Plants exhibit indeterminate growth (can grow throughout their life), while animals have determinate growth (stop growing after reaching maturity).
(iii) Reproduction: Both undergo process to produce offspring (seeds for plants and young ones for animals).	(iii) Reproductive Structures: Animals have specialized organs for reproduction, while plants use flowers, cones, or spores.

60. The table (See NCERT Textbook, Page 204) shows some data. Study the data and try to find out examples appropriate for the conditions given in the second and

third columns. If you think that an example for any of the conditions given below is not possible, explain why?

S. no.	Does it grow?	Does it respire?	Example	Remarks
1.	No	No		
2.	No	Yes		
3.	Yes	No		
4.	Yes	Yes		

Ans. :

S. no.	Does it grow?	Does it respire?	Example	Remarks
1.	No	No	Rock	Non-living, No growth or respiration
2.	No	Yes	Virus	Viruses are non-living outside host cells but respire in host
3.	Yes	No	Crystals (salt).	Non-living can perform tasks but does not respire
4.	Yes	Yes	Humans, Plants	Living beings

61. What are the similarities and distinguishing features in the life cycles of a mosquito and a frog?

Ans. : Similarities
→ Both begin life as eggs.
→ Both have a larval stage (tadpole in frogs, larvae in mosquitoes) that is aquatic.
Distinguishing Features
Mosquitoes have four stages
Egg → Larva → Pupa → Adult
Respiration: Larvae and pupae breathe through siphons. Frog has four stages
Egg → Tadpole → Froglet → Adult
Respiration: Tadpoles have gills, adults have lungs and can respire through their skin.

*** Answer The Following Questions To The Point.** [10]

62. Design an experiment to check if temperature has an effect on seed germination

Ans. : AIM: Experiment to Check the Effect of Temperature on Seed Germination.
Materials: Identical pots, soil, seeds, thermometers, and different tem¬perature-controlled environments (e.g., refrigerator, room temperature, heated environment).

Procedure

(i) Fill each pot with the same type of soil.

(ii) Plant seeds in each pot.

(iii) Place each pot in a different environment with controlled temperatures (e.g., cold, room temperature, warm). For example, keep one pot outside in balcony to get sunlight. Put another in shade in the room. Keep the third one in basement or at coldest part of the house.

(iv) Water each pot equally.

(v) Record the number of seeds germinated in each environment daily for two weeks.

Observation: Measure and compare the rate of germination and growth in different temperatures.

Conclusion: Determine the optimal temperature for seed germination based on observations.

63. When a seed turns into a sprout, it is said to have germinated. Predict whether the seeds in each pot will germinate. Record your predictions for each pot kept under different conditions in Table.

Pot with bean seeds	**Availability of**			**Seed germination**		**Possible reason for the observation**
	Air	Sunlight	Water	Prediction	Observation	
A: In direct sunlight and without water			No			
B: In direct sunlight and excess water						
C: In complete dark and moist soil						
D: In direct sunlight and moist soil						

Ans. :

Table: Effect of certain conditions on seed germination

Pot with bean seeds	Availability of			Seed germination		Possible reason for the observation
	Air	Sunlight	Water	Prediction	Observation	
A: In direct sunlight and without water	Yes	Yes	No	No	No seed germination	Water is necessary for the germination of seed
B: In direct sunlight and excess water	Yes	Yes	Yes (excess)	Yes	No, proper seed germination	In presence of excess water. Seeds can not disappear. So seed can not germinate properly.
C: In complete dark and moist soil	Yes	No	Yes (limited)	Yes	Yes, seed can be germinate	Light is not necessary for a seed to germinate. The majority of seeds grow most effectively in the dark
D: In direct sunlight and moist soil	Yes	Yes	Yes (limited)	Yes	Yes, seed can be germinate.	Light is not necessary for seed to germinate. The majority of seeds grow most efectively in the dark

* Match the following. [5]

Column A	Column B
64. Respiration	A. grows upward
65. Excretion	B. breathing in and out
66. Shoots	C. Removal of waste from body
67. Pupae	D. movement in plants
68. Spawn	E. Changes into insect
	F. cluster of eggs.

Ans. :

Column A	Column B
1. Respiration	B. breathing in and out
2. Excretion	C. Removal of waste from body
3. Shoots	A. grows upward
4. Pupae	E. Changes into insect
5. Spawn	F. cluster of eggs

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