B.K. BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
A CBSE DAY-CUM-BOYS' RESIDENTIAL SCHOOL

ANNUAL EXAMINATION (2025-26)
SCIENCE MARKING SCHEME (SET- I)

Class: VII **Time: 3hours**

Date: 21/03/'26 **Max Marks: 80**

SECTION- A BIOLOGY

1. a) Chlorophyll
2. b) Photosynthesis
3. b) Cow
4. b) Xylem
5. b) Budding
6. c) Anther
7. b) Phloem
8. b) Anther
9. (c) Assertion is true, but reason is false.

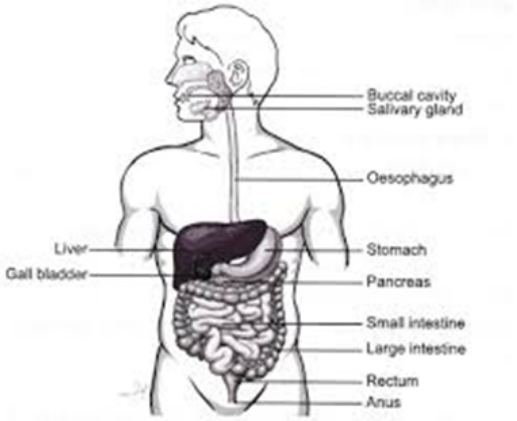
(A is true because xylem transports water. R is false because phloem transports food, not water.)

10. Heterotrophic nutrition is the mode of nutrition in which organisms depend on other organisms for their food.

Example: Human beings / Cow / Lion.

10. Transpiration
    Guttation

11. Diagram should include and label any four of the following parts:



- Mouth
- Oesophagus (Food pipe)
- Stomach

- Small intestine
- Large intestine

12.

Sexual Reproduction	Asexual Reproduction
Involves two parents	Involves one parent
Gametes are formed	Gametes are not formed
Offspring show variation	Offspring are identical to parent

OR

Three methods of asexual reproduction in plants with examples:

1. **Vegetative propagation** – Potato (tuber)
2. **Budding** – Yeast
3. **Spore formation** – Fern / Mushroom

13. a) Photosynthesis

b) Chlorophyll

c) Plants in shade were pale and weak because they did not get enough sunlight for photosynthesis. Due to less chlorophyll activity, they could not make enough food.

OR

d) Two ways to help shaded plants grow better:

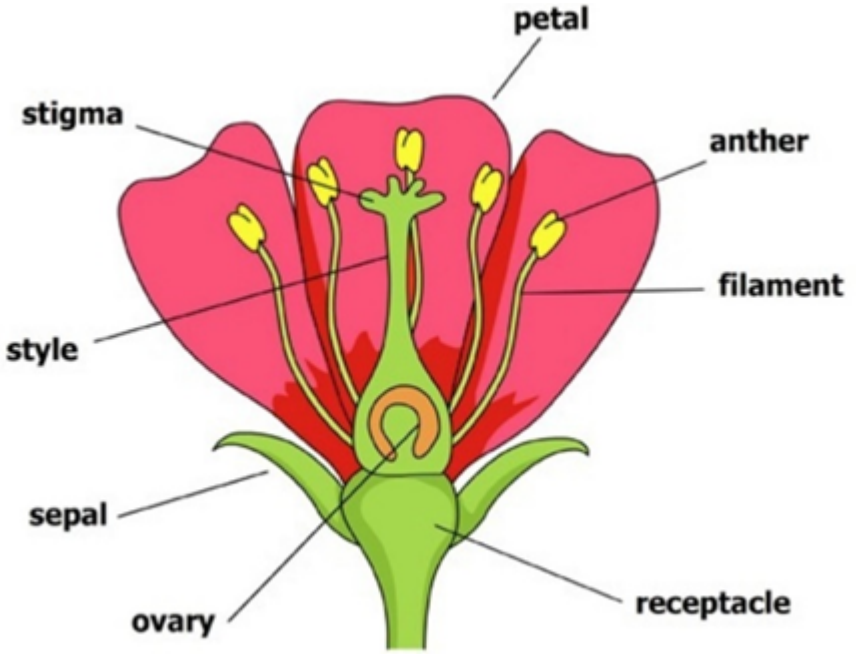
- Place them in sunlight.
- Use artificial light or trim nearby plants blocking sunlight.

14. **Process of sexual reproduction in flowering plants**

1. **Pollination** – Transfer of pollen from anther to stigma.
2. **Fertilisation** – Fusion of male and female gametes.
3. **Seed formation** – Fertilised ovule develops into seed.
4. **Fruit formation** – Ovary develops into fruit.

OR

- Stamen (Anther, Filament) – Male part
- Pistil/Carpel (Stigma, Style, Ovary) – Female part



SECTION- B CHEMISTRY

16. (c) neutral 1
17. (c) formic acid 1
18. (c) Turmeric 1
19. (c) Urea 1
20. (b) Sewage 1
21. (d) All of the above 1
22. (d) Decomposers 1
23. (d) A is false but R is true. 1

24. Definition: Indicators are chemical substances that change their color in the presence of an acidic or basic solution. They are used to identify whether a substance is acidic, basic, or neutral.

Two examples of natural indicators:

- Turmeric: Turns reddish-brown in basic solutions.
- China Rose (Hibiscus): Turns deep pink/magenta in acidic solutions and green in basic solutions. 2

25. Definition: Organic acids are naturally occurring acids found in plants and animals. They are generally weaker than mineral acids (inorganic acids) and contain carbon atoms in their molecular structure.

Four examples:

1. Citric acid (found in lemons/citrus fruits)
2. Lactic acid (found in milk/curd)
3. Acetic acid (found in vinegar)
4. Oxalic acid (found in spinach/tomatoes 3

26. **Attempt either option A or B.** 3

A. Deforestation is far more than just "cutting down trees." It is the removal of a critical, self-regulating engine that maintains our planet's health. When we clear forests, we aren't just removing wood; we are dismantling a complex system that impacts the climate, the soil, and the water cycle.

Effects of deforestation:

- 1. Global Climate Change

Forests act as "carbon sinks," meaning they absorb carbon dioxide from the atmosphere during photosynthesis. When trees are cut down or burned, that stored carbon is released back into the atmosphere. This accelerates the greenhouse effect, raising global temperatures and contributing to unstable weather patterns.

2. Loss of Biodiversity

Forests are home to approximately 80% of the world's terrestrial biodiversity. When their habitats are destroyed, species lose their food sources and shelter, leading to:

- Extinction: Many rare species cannot adapt quickly enough to new environments.
- Disrupted Food Chains**:** Removing one species (like a predator or a key pollinator) creates a domino effect that impacts the entire local ecosystem.

3. Soil Erosion and Land Degradation

Tree roots play a vital role in binding soil together. Without this network of roots, the topsoil—which is rich in nutrients and necessary for plant growth—becomes loose. It is easily washed away by rain (erosion) or blown away by wind.

OR

A. Definition: Consumers are heterotrophic organisms that cannot produce their own food and must feed on other organisms (plants or animals) to obtain energy

Three basic levels of consumers:

1. Primary Consumers (Herbivores): These animals eat plants directly. Example: Deer, rabbit, grasshopper.
2. Secondary Consumers (Carnivores): These animals eat primary consumers. Example: Frogs, small birds, snakes.
3. Tertiary Consumers (Top Carnivores): These are animals that eat secondary consumers and have few or no natural predators. Example: Lions, tigers, hawks.

27.

(i) (c) Hand lens
(ii) (a) Roots
(iii) Decomposers are micro-organisms that feed upon dead plant and animal tissues, breaking them down into simpler substances like humus, thereby returning nutrients to the soil.

OR

(iii) The presence of humus ensures that the nutrients contained in dead plants and animals are released back into the soil, where they can be absorbed by the roots of living plants to continue the life cycle.

28. **Attempt either option A or B.** 5

A. Wastewater is any water that has been used and contaminated by human activities, making it unsuitable for its original purpose without treatment. It is a complex mixture containing dissolved and suspended impurities such as organic matter, nutrients, and harmful microorganisms.

Sources of Wastewater

Wastewater is generated from several primary sectors:

- Domestic Sources: This is the water used in homes and residential buildings for activities like bathing, laundry, dishwashing, and flushing toilets. It often contains food scraps, detergents, human waste, and personal care products.
- Industrial Sources: Factories and manufacturing plants produce wastewater (effluent) as a byproduct of various processes like chemical production, metal refining, and food processing. This type typically carries high concentrations of toxic chemicals, heavy metals, and oils.
- Agricultural Sources: Wastewater from farms includes irrigation runoff and water from livestock operations. It often contains high levels of fertilizers (nitrates and phosphates), pesticides, and animal waste.
- Commercial Sources: Establishments like restaurants, hotels, hospitals, and offices generate wastewater that is similar to domestic sewage but may have higher levels of grease, food waste, and medical disinfectants.
- Stream water Runoff: Rainwater that flows over streets, rooftops, and parking lots is considered wastewater because it picks up pollutants like oil, debris, and animal droppings before entering drains.
- Institutional Sources: Schools, hospitals, and public offices also contribute significant amounts of wastewater through daily sanitation and maintenance activities.

OR

A sewerage system is an underground network of pipes, called sewers, that transports wastewater (sewage) from homes, schools, hospitals, and industries to a treatment plant or a disposal site. This system is crucial for sanitation and public health, as it prevents the accumulation of waste and the spread of disease.

The system typically includes:

- House drains: Collect wastewater from individual buildings.
- Manholes: Located at intervals (usually every 50-60 meters) to allow for inspection and cleaning of the sewer lines.

Main sewer pipes: Carry the collected sewage to the Wastewater Treatment Plant (WWTP).

SECTION-C PHYSICS

29. What is the SI unit of velocity?

(a) km/s (b) m/s (c) m/h (d) km/h

1

The following question consists of two statements – **Assertion** (A) and **Reason** (R). Answer these questions by selecting the appropriate option given below:
A. Both A and R are true, and R is the correct explanation of A.
B. Both A and R are true, and R is not the correct explanation of A.
C. A is true but R is false.
D. A is false but R is true.

30. **Assertion (A):** If a car travels 60 km in 2 hours, its speed is 30 km/h.

Reason (R): Speed is calculated by dividing distance by time.

1

31. **Assertion (A):** When a switch is OFF, the circuit becomes an open circuit.

Reason (R): An open switch breaks the path of electric current. 1

32. Draw the distance-time graph for uniform motion and non uniform motion. 2

33. Why are secondary cells preferred in mobile phones and laptops instead of primary cells?

2

OR

What is an electric circuit? Draw an electric circuit diagram using battery,wire,switch and bulb.

34. What is Shadow? Explain the characteristics of shadow. 2

35. (a). Define acceleration.Write its S.I unit.
(b). A car accelerates from rest to a velocity of 36 km/h in 20 s on a straight road. Calculate its acceleration in m/s^2

3

36. Draw and label the diagram of the incandescent bulb. Explain its working in detail.

3

37. Differentiate between transparent and translucent objects. Give two examples of each. 3

38. **Read the passage below and answer the questions:**

Rahul noticed that even after inserting new cells, his torch did not glow. On checking carefully, he found that the metal strip inside the torch was broken.

Questions:

a). What kind of circuit was formed due to the broken metal strip? 1
b) .How does a broken connection affect the flow of electric current? 1
c). What should Rahul do to make the torch work again? 2

or

d). Why did the torch not glow even with new cells?

39. **Attempt either option A or B.** 5

A. Name the principle on which pinhole camera works.Explain the working of a pinhole camera for a luminous object. Draw a diagram to support your answer.

OR

B. Explain the two types of shadows that can be formed depending on the type of objects.Write the conditions for the formation of shadow.