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Integrated Science

SECTION A

1. In the pinhole camera, the image formed is always
A. erect and bright
B. erect and blurred
C. inverted and real
D. inverted and virtual

2. An example of a body that does not produce its own light is the
A. moon
B. sun
C. star
D. firefly

3. When light travels from glass to air, its speed is
A. increased
B. reduced
C. halved
D. unchanged

4. A material that allows a small amount of light energy to pass through it but cannot be seen through is referred to as
A. opaque
B. reflective
C. translucent
D. transparent

5. How many times is the sun overheated at the equator within a year?
A. 1
B. 2
C. 3
D. 4

6. A group of stars form
A. the universe
B. the atmosphere
C. the solar system
D. a galaxy

7. A group of stars found in the universe is called
A. galaxy
B. meteor
C. meteorite
D. planet

8. The best method for checking erosion on a slope is
A. cover cropping
B. mixed cropping
C. contour ploughing
D. mulching

9. Soil conservation is important because it prevents loss of
A. carbon dioxide
B. oxygen
C. minerals
D. humus

10. The ability of the soil to supply the right amounts of essential nutrients to plants is known as
A. Soil consistency
B. Soil fertility
C. Soil structure
D. Soil texture

SOLUTION TO SECTION A

1. C 2. A 3. A 4. C 5. B 6. D 7. A 8. C 9. C 10. B

SECTION B

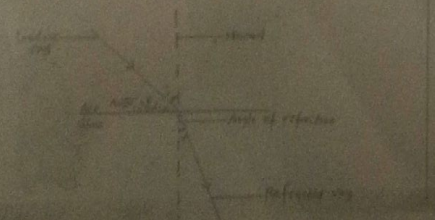
Light Energy

1a. Name two sources of each of:
(i) natural light;
(ii) artificial light.
1b (i) What is the refraction of light?
1b (ii) Sketch a diagram to show the path of a light ray when it travels from air to glass.

Solution
1a (i) Sources of natural light
- Sun
- Star
- Firefly

1a (ii) Sources of artificial light
- Torchlight
- Electric bulb
- Lantern

1b (i) Refraction of light is the change in direction of a light ray when it travels from one medium to another medium of different optical density.
1b (ii) Diagram showing the path of a light ray moving from air to glass.



2a (i) What is the Milky Way?
2a (ii) What is a planet?
2a (iii) Name two planets between the Sun and the Earth
2b (i) What are stars?
2b (ii) Arrange in order, starting from the sun, the first four planets in the solar system.

Solution
2a (i) The Milky Way is the group of planets and stars to which the Earth belongs.
2a (ii) A planet is a heavenly body that moves around the sun.
2a (iii) Planets between the Sun and the Earth
- Mercury
- Venus

2b (i) Stars are heavenly bodies in space that burn to produce heat and light.
OR
A star is a glowing ball of hot gas in space.
2b (ii) First four planets in the solar system, starting from the Sun
- Mercury
- Venus
- Earth
- Mars

Soil

3a (i) Name three plant nutrients
3a (ii) State two examples each of;
a) macro nutrients
b) micro nutrients
3b. List three ways of maintaining soil fertility
3c. State three reasons why vegetable farming is important

Solution
3a (i) Plant nutrients
- Magnesium
- Potassium
- Zinc
- Nitrogen

3a (ii) Examples of;
a) macro nutrients – carbohydrate, lipid, protein, etc.
b) micro nutrients – Phosphorus, Zinc, Vitamins, etc.
N.B
Since the question did not specify, macro and micro nutrients of both plants and animals can be stated
3b. Ways of maintaining soil fertility
- Crop rotation
- Fertiliser application
- Cover cropping
- Mulching etc.

3c. Reasons why vegetable farming is important
- It serves as a source of employment for people
- It serves as a source of income to farmers
- It serves as a source of food
- Their produce contains nutrients, e.g. vitamins, carbohydrates, etc., which are needed for normal growth.

Credit: Mr George Asumadu