

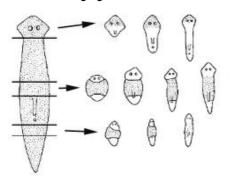


### CLASS 10th SYLLABUS & SAMPLE QUESTIONS

Chemical reactions and equations, Acids, bases and salts, Metals and non-metals, Carbon and its compounds, Periodic classification of elements, Life processes, Control and coordination, How do organisms reproduces? Heredity and evolution, Light – reflection and refraction, Human eye and colourful world, Electricity, Magnetic effects of electric currents, Sources of energy, Our environment, Management of natural resources, General & applied science

The Actual Question Paper Contains 40 Questions. The Duration of the Test Paper is 60 Minutes.

1. Which mode of reproduction has been shown in the following figure?

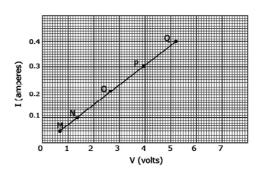


- (A) Asexual mode of reproduction
- (B) Sexual mode of reproduction
- (C) Parthenogenesis
- (D) All of these
- (E) None of these
- 2. If 100 J of energy is available at the producer level, calculate the amount of energy available to hawk in the following food chain.

Green plants  $\rightarrow$  Grasshopper  $\rightarrow$  Frog  $\rightarrow$  Snake  $\rightarrow$  Hawk

- (A) 0.1 J
- (B) 0.01 J
- (C) 10 J
- (D) 10000 J
- (E) None of these

### 3. Examine the graph and calculate the resistance of the coil at the point Q?



- (A) 12 Ohms
- (B) 5.2 Ohms
- (C) 13 Ohms
- (D) 0.4 Ohms
- (E) None of these
- 4. The table given below shows four chemical reactions:

Equation	Chemical Equation					
1.	$2AI + 3H_2O \Rightarrow AI_2O_3 + 3H_2$					
2.	$Fe + 4H_2O \rightarrow Fe_3O_4 + 4H_2$					
3.	Fe + HCl $\rightarrow$ FeCl <sub>2</sub> + H <sub>2</sub>					
4.	$Mg + 2HCL \rightarrow MgCl_2 + H_2$					

#### International Olympiad of Science - iOS'14

## Which of the preceding chemical reactions satisfy the law of conservation of mass?

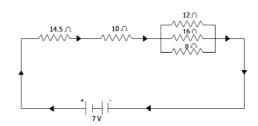
- (A) Equation 1 and 2
- (B) Equation 1 and 4
- (C) Equation 3 and 4
- (D) Equation 2 and 4
- (E) None of these
- 5. Name the hydrocarbon given below.

- (A) Propanal
- (B) Propene
- (C) Propyne
- (D) Propanoic acid
- (E) None of these
- 6. On which one of the following factors the strength of an electromagnet depends?
  - (A) The number of turns in the coil
  - (B) The current flowing in the coil
  - (C) The length of air gap between its poles
  - (D) All of these
  - (E) None of these
- 7. There is a device in the motor which is used to reverse the direction of current in the coil of a motor. What is the name of this device?
  - (A) Commutator
- (B) Magnetic field
- (C) Armature
- (D) All of these
- (E) None of these
- 8. What are the end products of the anaerobic respiration that the yeast perform?
  - (A) Carbon dioxide, water and energy

- (B) Alcohol, carbon dioxide and energy
- (C) Lactic acid, carbon dioxide, and energy
- (D) Alcohol, water and energy
- (E) None of these

# 9. Which one of the following statements correctly describes the buoyant force?

- (A) The buoyant force is the downward force that a fluid exerts on fluid when it displaces the fluid.
- (B) The buoyant force is the upward force that a fluid exerts on an object in the fluid.
- (C) The buoyant force is the upward force that a fluid exerts on fluid when it displaces the fluid.
- (D) The buoyant force is the downward force that a fluid exerts on an object in the fluid.
- (E) None of these
- 10. Examine the given circuit and calculate the total current flowing in the circuit.



- (A) 28 ampere
- (B) 4 ampere
- (C) 0.25 ampere
- (D) 3.7 ampere
- (E) None of these



ANSWERS										
1. (A)	2. (B)	3. (C)	4. (B)	5. (C)	6. (D)	7. <b>(</b> A <b>)</b>	8. (B)	9. (B)	10. (C)	