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Class 10 - Science

Date: 02-10-2025

Section A - Multiple Choice Questions

Q1. When solid calcium oxide reacts vigorously with water, it produces calcium hydroxide and releases a large amount of heat. What type of chemical reaction is this? (1 marks)

a. Decomposition reaction
b. Combination reaction
c. Displacement reaction
d. Double displacement reaction

Q2. Which of the following is the energy currency for most cellular processes? (1 marks)

a. DNA
b. RNA
c. ATP
d. Glucose

Q3. If two resistors, R1 and R2, are connected in parallel, how does their equivalent resistance (Req) compare to the individual resistances? (1 marks)

a. Req is always greater than both R1 and R2.
b. Req is equal to R1 + R2.
c. Req is always smaller than the smallest individual resistance.
d. Req is equal to the average of R1 and R2.

Q4. A solution turns red litmus paper blue. Its pH value is likely to be: (1 marks)

a. 2
b. 5
c. 7
d. 10

Q5. A student uses a concave mirror to project the image of a candle flame on a screen. If the screen is moved closer to the mirror, the image size decreases. Where must the candle (object) currently be placed? (1 marks)

a. At the focus (F)
b. Between the pole (P) and focus (F)
c. Between the center of curvature (C) and focus (F)
d. Beyond the center of curvature (C)

Q6. Which mode of reproduction is generally favored by organisms living in a stable environment? (1 marks)

a. Sexual reproduction
b. Fragmentation
c. Budding
d. Fission

Section C - Short Answer Questions

Q7. What are amphoteric oxides? Give one example of a metal oxide that exhibits this property. (2 marks)

Q8. State the role of the receptor and effector organs in the process of a reflex action. (2 marks)

Q9. A current-carrying straight conductor experiences a force when placed in a uniform magnetic field. State the rule used to determine the direction of this force and list the three quantities related by this rule. (2 marks)

Q10. Explain why only about 10% of the energy is transferred to the next trophic level in a food chain. (2 marks)

Q11. Draw the electron dot structure for Methane (CH_4). Explain the type of bonding present in this molecule. (3 marks)

Q12. What is Myopia? State the two possible causes of this defect and suggest the type of lens required for its correction. (3 marks)