MHT CET 2026 BiologyAnswer Key PDF

Biology

1. **Option (b) Hydra**
Explanation:
Cnidarians like *Hydra* possess a simple nerve net, which lacks a centralized brain or central nervous system. This represents the most primitive type of nervous system found in the animal kingdom.

2. **Option (b) Auxin**
Explanation:
Apical dominance is a physiological phenomenon in plants where the growth of the central stem is favored while lateral buds remain dormant. This process is primarily controlled by auxins produced in the shoot apex.

3. **Option (b) IgA**
Explanation:
Colostrum, the initial milk produced by mothers shortly after birth, is rich in passive immunoglobulins. Secretory Immunoglobulin A (IgA) is the most abundant antibody in it, protecting the newborn against pathogens.

4. **Option (c) Amensalism**
Explanation:
Amensalism is an ecological interaction in which one species is harmed, killed, or inhibited, while the other participating species remains entirely unaffected by the relationship.

5. **Option (c) Residual Volume (RV)**
Explanation:
Residual Volume refers to the volume of air that remains trapped inside the lungs and respiratory pathways even after a maximal, forceful expiration to prevent alveolar collapse.

6. **Option (b) Cerebellum**
Explanation:
The cerebellum is the region of the hindbrain primarily responsible for coordinating voluntary muscle movements, maintaining posture, and regulating body equilibrium.

Physics

7. **Option (d) It becomes one-fourth**
Explanation:
According to Coulomb's Law, the electrostatic force is inversely proportional to the square of the distance separating the charges ($F \propto r^{-2}$). Doubling the distance reduces the force to one-fourth.

8. **Option (b)** $a = \frac{v^2}{r}$
Explanation:
Centripetal acceleration is the rate of change of tangential velocity direction for a body in circular motion. It is mathematically defined as the square of linear velocity divided by the orbital radius.

9. **Option (b) Curie's Law**
Explanation:
Curie's Law states that the magnetic susceptibility (χ) of a paramagnetic material is inversely proportional to its absolute temperature (T), expressed as $\chi = C/T$.

10. **Option (b) Tesla (T)**
Explanation:
The SI unit of magnetic induction (or magnetic flux density) is the Tesla (T), which is defined as one Weber per square meter ($\mathrm{Wb/m^2}$).

Chemistry

11. **Option (d) +7**
Explanation:
Let the oxidation state of Chlorine be x. Since Oxygen is -2 and the molecule Cl_2O_7 is neutral, $2x + 7(-2) = 0$ simplifies to give $x = +7$.

12. **Option (c)** *sp*
Explanation:
The carbon atom in CO_2 forms two double bonds (one with each oxygen atom), resulting in a linear molecular geometry. This arrangement requires *sp* hybridization of the central carbon.

13. **Option (c) Tertiary > Secondary > Primary**
Explanation:
The stability of carbocations is determined by hyperconjugation and inductive effects. Tertiary carbocations, having more alkyl groups to donate electron density, are the most stable, followed by secondary and primary.

14. **Option (b) Picric Acid (2,4,6-trinitrophenol)**
Explanation:
Reacting phenol with concentrated nitric acid leads to rapid, multi-site electrophilic substitution. This produces 2,4,6-trinitrophenol, commonly known as picric acid.

15. **Option (b)** 1
Explanation:
The van 't Hoff factor (i) measures the dissociation or association of solute particles in solution. For a non-electrolyte, which does not dissociate or associate, this value is exactly 1.