

MHT CET 2026 Biology Answer Key PDF

Physics

1. **Option (a)** 80 m/s^2

Explanation:

Centripetal acceleration is calculated using the formula $a_c = \frac{v^2}{r}$. Substituting the given values yields $a_c = \frac{20^2}{5} = \frac{400}{5} = 80 \text{ m/s}^2$.

2. **Option (c)** **Total Internal Reflection**

Explanation:

Signal transmission in optical fibers occurs via total internal reflection. Light rays entering the fiber core undergo repeated internal reflections at the core-cladding boundary, trapping and guiding the signal with minimal loss.

3. **Option (c)** 2Ω

Explanation:

For resistors connected in parallel, the reciprocal of the equivalent resistance is given by $\frac{1}{R_{eq}} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$. Substituting 6Ω for each yields $\frac{1}{R_{eq}} = \frac{3}{6} \Rightarrow R_{eq} = 2 \Omega$.

4. **Option (b)** **It is halved**

Explanation:

According to Curie's Law, the magnetic susceptibility (χ) of a paramagnetic material is inversely proportional to its absolute temperature (T). Therefore, doubling the absolute temperature reduces the susceptibility to half of its original value.

5. **Option (b)** **Balmer Series**

Explanation:

The Balmer series of the hydrogen emission spectrum corresponds to electronic transitions from outer shells to the second energy level ($n = 2$), which produces spectral lines lying in the visible region.

Chemistry

6. **Option (b)** **Primary < Secondary < Tertiary**

Explanation:

The stability of carbocations is determined by hyperconjugation and inductive effects from adjacent alkyl groups. Consequently, tertiary carbocations are the most stable, followed by secondary, and then primary.

7. **Option (b)** $+5$

Explanation:

Let the oxidation state of Phosphorus in H_3PO_4 be x . Since hydrogen is $+1$ and oxygen is -2 , setting up the charge neutrality equation gives $3(+1) + x + 4(-2) = 0$, which solves to $x = +5$.

8. **Option (b)** **Violet**

Explanation:

Phenol reacts with neutral ferric chloride (FeCl_3) to form a stable coordination complex, ferric phenoxide, which produces a characteristic deep violet color in solution.

9. **Option (c) 3****Explanation:**

Nitric acid (HNO_3) is a strong monoprotic acid that dissociates completely, giving $[\text{H}^+] = 0.001 \text{ M} = 10^{-3} \text{ M}$. The pH is calculated as $-\log_{10}[\text{H}^+] = -\log_{10}(10^{-3}) = 3$.

10. **Option (b) 1,3-Butadiene and Styrene****Explanation:**

Buna-S is a synthetic copolymer elastomer formed through the addition polymerization of 1,3-butadiene and styrene monomers in a standard 3 : 1 ratio.

Biology

11. **Option (c) Auxin****Explanation:**

Apical dominance is a physiological phenomenon where the main central stem of the plant grows preferentially while lateral buds are suppressed. This process is actively promoted by auxins synthesized at the shoot tip.

12. **Option (c) IgA****Explanation:**

Colostrum, the specialized first milk produced shortly after birth, contains maternal antibodies that provide passive immunity. Immunoglobulin A (IgA) is the most abundant antibody class found in colostrum.

13. **Option (c) 9 : 3 : 3 : 1****Explanation:**

The standard phenotypic ratio obtained in the F_2 generation of a Mendelian dihybrid cross involving two independent, heterozygous traits is 9 : 3 : 3 : 1, demonstrating the law of independent assortment.

14. **Option (b) DNA Ligase****Explanation:**

DNA ligase acts as "molecular glue" in recombinant DNA technology. It catalyzes the formation of phosphodiester bonds to covalently link adjacent DNA fragments, repairing or sealing nicks in the double-stranded backbone.

15. **Option (d) Amensalism****Explanation:**

Amensalism is an ecological interaction in which one organism is harmed, suppressed, or destroyed while the other organism remains entirely unaffected by the association.