

MHT CET 2026 Biology Answer Key PDF

Biology

1. Option (c) J. Priestley

Explanation:

While Stephen Hales first observed and measured the phenomenon of root pressure in plants, Joseph Priestley is credited with coining the term “Root Pressure Theory” to explain the hydrostatic mechanism of water transport.

2. Option (c) Liver

Explanation:

Angiotensinogen is an α -2-globulin precursor protein that is continuously synthesized and secreted into the bloodstream by the liver. It plays a critical role in the renin-angiotensin-aldosterone system.

3. Option (b) Leaves

Explanation:

The photoperiodic stimulus in plants is perceived by the leaves. Upon induction, the leaves synthesize a mobile flowering signal (florigen) which is then translocated to the shoot apex to initiate flowering.

4. Option (c) Columnae carneae

Explanation:

The irregular muscular ridges on the internal walls of the heart's ventricles are called columnae carneae (or trabeculae carneae). They prevent suction and help minimize turbulence of blood flow during ventricular contraction.

5. Option (b) AUG

Explanation:

The codon AUG has a dual function in genetic translation. It serves as the initiation codon (start signal) to begin protein synthesis and also codes for the amino acid methionine.

6. Option (c) F. Miescher

Explanation:

Friedrich Miescher is credited with the discovery of DNA in 1869, which he isolated from white blood cells and named “nuclein”. Watson, Crick, and Franklin later contributed to determining its double-helix structure.

Physics

7. Option (a) 1.581 Hz

Explanation:

From the potential energy $U = \frac{1}{2}m\omega^2x^2 = 0.1\pi^2x^2$ with $m = 0.02$ kg, we solve for angular frequency $\omega = \sqrt{10}\pi$. The frequency is then calculated as $f = \frac{\omega}{2\pi} = \frac{\sqrt{10}}{2} \approx 1.581$ Hz.

8. Option (a) $1 : \sqrt{27}$

Explanation:

The radiant power of a star is given by $P = 4\pi R^2\sigma T^4$. Using $P_A = 3P_{\text{Sun}}$ and the temperatures, the ratio of their radii is computed from $\left(\frac{R_A}{R_{\text{Sun}}}\right)^2 = \frac{3}{1} \times \left(\frac{2000}{6000}\right)^4 = \frac{1}{27}$, yielding $1 : \sqrt{27}$.

9. **Option (b) 300 Hz****Explanation:**

The distance between 11 consecutive crests is equal to 10 wavelengths ($10\lambda = 1 \text{ m} \Rightarrow \lambda = 0.1 \text{ m}$). Using the wave speed relation $v = f\lambda$, the frequency is calculated as $f = \frac{30}{0.1} = 300 \text{ Hz}$.

10. **Option (a) $\frac{2G}{23}$** **Explanation:**

The shunt resistance S is given by $S = \frac{I_g G}{I - I_g}$. Substituting the given value of galvanometer current, $I_g = 0.08I$, yields $S = \frac{0.08IG}{I - 0.08I} = \frac{0.08G}{0.92} = \frac{2G}{23}$.

Chemistry

11. **Option (b) SnCl_2/HCl** **Explanation:**

The Stephen reaction involves the reduction of nitriles to imines using gaseous hydrogen chloride and anhydrous tin(II) chloride (SnCl_2/HCl), followed by acid hydrolysis to produce aldehydes.

12. **Option (b) Phenol and Formaldehyde****Explanation:**

Bakelite is a thermosetting polymer synthesized via a step-growth polymerization reaction. The monomers used to construct its highly cross-linked network are phenol and formaldehyde.

13. **Option (d) CCl_4** **Explanation:**

Carbon tetrachloride (CCl_4) possesses a highly symmetrical tetrahedral geometry. Because of this symmetry, the individual polar C-Cl bond dipole moments vectorially cancel each other out, resulting in a net dipole moment of zero.

14. **Option (b) 2-Methylbut-2-ene****Explanation:**

Reductive ozonolysis of 2-methylbut-2-ene cleaves its double bond, yielding one molecule of acetaldehyde (ethanal) and one molecule of acetone (propanone), matching the reaction products perfectly.