

JEE Main 2024 Physics Question Paper Feb 1 Shift 1 (B.E./B.Tech)

JEE Main Physics Questions

Ques 1. Determine Min. Energy released when an electron jumps to ground state in Balmer series from infinity.

Ans. +1.9eV

Ques 2. Determine ratio of de broglie wavelength of α - particle and proton

Ans. 1:2

Ques 3. If current in a conductor $3t^2 + 4t^3$, charge = ?, flow $t = 1$ to $t = 2$ s

Ans. 22C

Ques 4. With rise in temperature the young's modulus of elasticity

- A. Increases**
- B. Decreases**
- C. Remaining constant**
- D. None of these**

Ans. B

Ques 5. Find percentage change in capacitance if potential difference across it has been changed from V to $2V$.

Ans. 100%

Ques 6. A vernier caliper has 10 main scale divisions coinciding with 11 vernier scale division equals 5 mm. the least count of the device is :

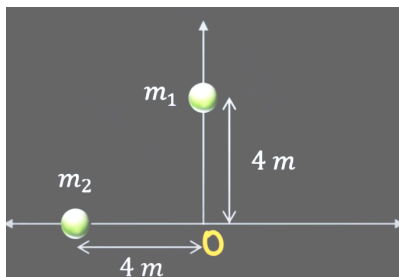
- A. $\frac{1}{2}$**
- B. $\frac{5}{12}$**
- C. $\frac{5}{11}$**
- D. 0.3**

Ans. C

Ques 7. The length of a seconds pendulum if it is placed at height $2R$ from the surface of the earth (R : radius of earth) is $\frac{10}{x\pi^2}$ m. Find x

Ans. 9

Ques 8. Two particles each of mass 2 kg are placed as shown in $x \rightarrow y$ plane. If the distance of centre of mass from origin is $\frac{4\sqrt{2}}{x}$ find x :



Ans. 2

Ques 9. A bullet of mass 10^{-2} kg and velocity 200 m/s gets embedded inside the bob of mass 1 kg of a simple pendulum. The max. height that the system rises by is _____ cm.

Ans. 20

Ques 10. De Broglie wavelength of proton = λ and that of an α particle 2λ . The ratio of velocity of proton to that of α particle is : De Broglie wavelength of proton = λ and that of an α particle 2λ . The ratio of velocity of proton to that of α particle is :

- A. 8**
- B. $\frac{1}{8}$**
- C. 4**
- D. $\frac{1}{4}$**

Ans. B