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 3t² + 4t³, charge = ?, flow t = 1 to t = 2s

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**. ½
- B. 5/12
- C. 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 $10/x\pi^2$ m. Find x

Ans. 9

Ques 8. Two particles each of mass 2 kg are places as shown in $x \rightarrow y$ plane. If the distance of centre of mass from origin is $4\sqrt{2}/x$ 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 a particle 2λ . The ratio of velocity of proton to that of a 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.** 1/8
- C. 4
- D. 1/4

Ans. B

