

CUET UG Physics Answer Key 2024

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| 1. The kinetic energy of an electron in ground level in hydrogen atoms is K units. The value of its potential energy and total energy respectively are _. | (i) $-2K$; $-K$ |
| 2. Two nuclei have mass numbers A and B respectively. The density ratio of the nuclei is | (iv) 1:1 |
| 3. A point source causing photoelectric emission from a metallic plate is moved away from the plate. The variation in photoelectric current with distance from the source is correctly represented by the graph | (iii) Option 3 |
| 4. A proton accelerated through a potential difference V has a de Broglie wavelength λ . On doubling the accelerating potential, de Broglie wavelength of the proton | (iv) Decreases |
| 5. The shortest wavelengths emitted in the hydrogen spectrum corresponding to different spectral series are under: | (ii) (A), (C), (B), (D) |
| 6. Silicon can be doped using one of the following elements as dopant: | (iii) (A), (B), (C), and (D) |
| 7. Given below are V versus I graphs for different types of p-n junction diodes marked A, B, C, and D | (i) (D), (C), (A), and (B) |
| 8. A wire carrying current I , bent as shown in the figure, is placed in a uniform field B that emerges normally out from the plane of the figure. The force on this wire is: | (i) $4BIR$, directed vertically downward |
| 9. The refractive index of the material of an equilateral prism is $\sqrt{2}$. The angle of the minimum deviation of that prism is _. | (iii) 30° |
| 10. The transfer of an integral number of _ is one of the evidence of quantization of electric charge. | (iii) electrons |
| 11. When a slab of insulating material 4mm thick is introduced between the plates of a parallel plate capacitor of separation 4 mm, it is found that the distance between the plates has to be increased by 3.2 mm to restore the capacity to its original value. The dielectric constant of the material is: | (ii) 5 |

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| 12. A copper ball of density 8.0g/cc and 1cm in diameter is immersed in oil of density 0.8g/cc. The charge on the ball of it remains just suspended in oil in an electric field of intensity 600π V/m acting in the upward direction is | (ii) $2 \times 10^{-5}C$ |
| 13. A metal wire is subjected to a constant potential difference. When the temperature of the metal wire increases, the drift velocity of the electron in it | (ii) decreases, thermal velocity of the electrons decreases |
| 14. For the given mixed combination of resistors, calculate the total resistance between points A and B | (ii) 18Ω |
| 15. A cell of emf 1.1 V and internal resistance 0.5Ω is connected to a wire of resistance 0.5Ω . Another cell of the same emf is now connected in series with the intention of increasing the current but the current in the wire remains the same. The internal resistance of the series is: | (i) 1Ω |
| 16. P, Q, R, and S are four wires of resistances 3, 3, 3 and 4Ω respectively. They are connected to form the four arms of a Wheatstone bridge circuit. The resistance with which S must be shunted in order that the bridge may be balanced is _. | (ii) 1Ω |
| 17. Magnetic moment of a thin bar magnet is 'M' if it is bent into a semicircular form, its new magnetic moment will be _. | (iv) $2M/\pi$ |
| 18. Ferromagnetic material used in Transformers must have _. | (ii) High permeability and Low Hysteresis loss |
| 19. A conducting ring of radius r is placed in a varying magnetic field perpendicular to the plane of the ring. If the rate at which the magnetic field varies is the electric field intensity at any point of the ring is _. | (i) rx |
| 20. A 50 Hz ac current of crest value. A flows through the primary of a transformer. If the mutual inductance between the primary and secondary be 0.5 H, the crest voltage induced in the secondary is _. | (iii) 100V |
| 21. A long solenoid of diameter 0.1m has 2×10^3 turns per meter. At the centre of the solenoid a coil of 100, 0.1mm is placed with its axis coinciding with the solenoid axis. The current in the solenoid reduces at a constant rate to 0A in 0.05s. If the resistance of the coil is $10\pi^2\Omega$, then the total charge flowing through the coil during this time is | (ii) $32c$ |
| 22. Lower half of a convex lens is made opaque. Which of the following statements describes the image of the object placed in front of the lens? | (iii) (C) only |
| 23. Two slits are made 0.1mm apart and the screen is placed 2m away. The fringe separation when a light of wavelength 500 nm is used is _. | (i) 1 cm |
| 24. For an astronomical telescope having an objective lens of focal length 10 m and an eyepiece lens of focal length 10 cm telescope the tube length and magnification respectively are _. | (iv) 1010cm, 100 |
| 25. According to Bohr's model (A) The radius of the orbiting electron is directly proportional to 'n'. (B) The speed of the orbiting electron is directly proportional to '1/n'. (C) The magnitude of the total energy of the orbiting electron is directly proportional to '1/n ² '. (D) The radius of the orbiting electron is directly proportional to 'n' | (iv) B, C, and D only |