NEET 2026 (3 May, cancelled) — Physics Question Paper with Solutions

35 Physics questions as set in the paper · answers checked by RankUp

NEET 2026 (3 May, cancelled)

1. The speed of light in vacuum is taken as unity. If light takes 6 min 40 s to reach the Earth from the Sun, the distance between the Sun and the Earth in new unit is:

(A) 3×10^8
(B) 500
(C) 3×10^{10}
(D) 400

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2. Match List I with List II:

List I — List II

A. Young's Modulus — I. $(\Delta d/\Delta L)(L/d)$
B. Compressibility — II. $FL/(A\,\Delta L)$
C. Bulk Modulus — III. $-(1/\Delta P)(\Delta V/V)$
D. Poisson's Ratio — IV. $-P(V/\Delta V)$

Choose the correct answer from the options given below:

(A) A-IV, B-I, C-II, D-III
(B) A-III, B-II, C-I, D-IV
(C) A-I, B-IV, C-III, D-II
(D) A-II, B-III, C-IV, D-I

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3. The angular speed of a flywheel is increased from 600 rpm to 1200 rpm in 10 s. The number of revolutions completed by the flywheel during this time is:

(A) 900
(B) 600
(C) 150
(D) 300

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4. A resistor is connected to a battery of 12 V emf and internal resistance 2 Ω. If the current in the circuit is 0.6 A, the terminal voltage of the battery is:

(A) 10 V
(B) 1.2 V
(C) 12 V
(D) 10.8 V

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5. A flask contains argon and chlorine in the ratio of 2 : 1 by mass. The temperature of the mixture is 27°C. The ratio of root mean square speed of the molecules of the two gases ($V_{rms}(Ar)/V_{rms}(Cl)$) is:
(Atomic mass of argon = 40.0 u and molecular mass of chlorine = 70.0 u)

(A) $\sqrt{7}/2$
(B) 7/4
(C) 7/2
(D) $2/\sqrt{7}$

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6. Match List I with List II.

List-I — List-II

A. $E = h\nu$ — I. de Broglie wavelength

B. Diffraction and Interference — II. Particle nature of light

C. $\lambda = h/p$ — III. Wave nature of light

D. Compton effect — IV. Energy of photon

(A) A-IV, B-I, C-II, D-III

(B) A-IV, B-III, C-II, D-I

(C) A-I, B-IV, C-III, D-II

(D) A-IV, B-III, C-I, D-II

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7. In the first excited state of hydrogen atom, the energy of its electron is −3.4 eV. The radial distance of the electron from the hydrogen nucleus in this case is approximately:

(Take 1 eV = 1.6×10^{-19} J, e = 1.6×10^{-19} C and $1/4\pi\varepsilon_0 = 9 \times 10^9$ N m²/C²)

(A) 2.1×10^{-9} m

(B) 2.1×10^{-8} m

(C) 2.1×10^{-10} m

(D) 2.1×10^{-11} m

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8. A box of mass 15 kg is kept on the floor of a stationary trolley. The coefficient of static friction between the box and the trolley is 0.12. Keeping the box in stationary state over the trolley, the maximum acceleration with which the trolley can be moved horizontally in m s^{-2} is:

(g = 10 m/s²)

(A) 2.1

(B) 1.8

(C) 1.5

(D) 1.2

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9. The amount of work done to raise a mass 'm' from the surface of the Earth to a height equal to the radius of the Earth 'R' will be

(A) 2mgR

(B) mgR/4

(C) mgR

(D) mgR/2

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10. Each side of a metallic cube of mass 5.580 kg is measured to the 9.0 cm. Keeping the significant figures in view, the density of the material of the cube can be best expressed as $X \times 10^3$ kg m^{-3} where the value of X is:

(A) 7.654

(B) 7.6

(C) 7.65

(D) 7.7

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11. The sum of kinetic energy and potential energy of a simple pendulum bob is 0.02 joule. The speed of the simple pendulum bob at equilibrium position is approximately:
(Consider mass of the bob = 20 g)

(A) 0.2 m/s
(B) 1.41 m/s
(C) 14.1 m/s
(D) 2.0 m/s

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12. In Young's double slit experiment, using monochromatic light of wavelength λ, the intensity of light at a point on the screen where the path difference is λ, is K units. The intensity of light at a point where the path difference is λ/3 will be

(A) K/4
(B) K
(C) 2K
(D) K/2

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13. An ac circuit contains a resistance of 1 kΩ, a capacitor of 0.1 μF and an inductor of 1 mH connected in series. The resonance frequency of the circuit is approximately:

(A) 13.5 kHz
(B) 10.1 kHz
(C) 20.7 kHz
(D) 15.9 kHz

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14. In interference and diffraction, the light energy is redistributed. If it reduces in one region, producing a dark fringe, it increases in another region, producing a bright fringe.
A. As there is no gain or loss of energy, these phenomena are consistent with the principle of conservation of energy.
B. Diffraction and interference are characteristics exhibited only by light waves.
Choose the correct answer from the options given below:

(A) A is true and B is also true
(B) A is false, but B is true
(C) A is true, but B is false
(D) Both A and B are false

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15. For a travelling harmonic wave $y(x, t) = 2.0 \cos 2\pi(10t - 0.0080x + 0.35)$, where x and y are in cm and t in s. The phase difference between oscillatory motion of two points separated by a distance of 0.5 m is:

(A) 0.08π rad
(B) 0.8π rad
(C) 8π rad
(D) 0.008π rad

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16. The magnitude and direction of the acceleration produced in a body of mass 5 kg when two mutually perpendicular forces 8 N and 6 N act on it, are respectively:

(A) 20 m s^{-2}; $\tan^{-1}(4/3)$ with 8 N force
(B) 2 m s^{-2}; $\tan^{-1}(3/4)$ with 6 N force
(C) 2 m s^{-2}; $\tan^{-1}(4/3)$ with 8 N force
(D) 2 m s^{-2}; $\tan^{-1}(3/4)$ with 8 N force

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17. Consider two uncharged capacitors of equal capacitance 200 pF. One of them is charged by a 100 V supply and disconnected. Now this capacitor is connected to the uncharged capacitor. The amount of electrostatic energy lost in the process is:

(A) 0.5×10^{-6} J
(B) 1.0 J
(C) 1.0×10^{-6} J
(D) 0.5 J

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18. The power of a crane, which lifts a mass of 1000 kg to a height of 20 m in 10 s is: ($g = 9.8$ m/s^2)

(A) 19.6 W
(B) 39.2 W
(C) 19.6 kW
(D) 39.2 kW

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19. In a vernier calliper, 20 VSD coincide with 16 MSD (each division of length 1 mm). The least count of the vernier callipers is:

(A) 0.2 cm
(B) 0.01 cm
(C) 0.02 cm
(D) 0.1 cm

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20. When a ruler falls vertically, 5 different persons catch it with different reaction times. ($g = 9.8$ m s^{-2})

A. Person A has reaction time of 0.20 s.
B. Person B has reaction time of 0.22 s.
C. Person C has reaction time of 0.18 s.
D. Person D has reaction time of 0.19 s.
E. Person E has reaction time of 0.21 s.
What is the correct order of the distance travelled by the ruler for each person?

(A) B > E > A > C > D
(B) C > D > A > B > E
(C) B > E > A > D > C
(D) C > D > A > E > B

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21. A room heater is rated 400 W, 220 V. If the supply voltage drops to 200 V, what will be the power consumed (approximately)?

(A) 200 W
(B) 400 W
(C) 331 W
(D) 121 W

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22. A 100-turn closely wound circular coil of radius 5 cm has a magnetic field of 3.14×10^{-3} T at its centre. The current flowing through the coil, and the magnitude of the magnetic moment of this coil are, respectively :
(Take $\mu_0 = 4\pi \times 10^{-7}$ T m/A)

(A) 2 A, 10 A m^2
(B) 2.5 A, 20 A m^2
(C) 2 A, 4 A m^2
(D) 2.5 A, 2 A m^2

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23. A rectangular wire loop of sides 8 cm and 3 cm with a small cut, is moving out of a region of uniform magnetic field of magnitude 0.3 T directed normal to the plane of the loop. The emf developed across the cut, if the velocity of the loop is 2 cm s^{-1}, in a direction normal to the shorter side of the loop, will be :

(A) 4.8×10^{-4} volt
(B) 1.2×10^{-4} volt
(C) 1.3×10^{-4} volt
(D) 1.8×10^{-4} volt

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24. Four statements are given (A is mass number):
A. The volume of a nucleus is proportional to A^(1/3).
B. The volume of a nucleus is proportional to A.
C. The difference in mass of an atom and its nucleus is called the mass defect.
D. The difference in mass of a nucleus and its constituents is called the mass defect.
Choose the correct answer from the options given below:

(A) A and C are true, but B and D are false
(B) B and C are true, but A and D are false
(C) A and D are true, but B and C are false
(D) B and D are true, but A and C are false

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25. An unknown nucleus has a nuclear density of 2.29×10^{17} kg/m^3 and mass of 19.926×10^{-27} kg. Its mass number A is approximately:
(Take $R_0 = 1.2 \times 10^{-15}$ m, $4\pi = 12.56$)

(A) 12
(B) 20
(C) 16
(D) 19

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26. Savitha, a XI standard student, while conducting an experiment to determine the effective length of a simple pendulum L, notes down the data of time taken to complete 30 oscillations as 60 s and hence calculates the length of the simple pendulum as: (Take $\pi^2 = 9.8$, and $g = 9.8$ m/s^2)

(A) 0.75 m
(B) 1.5 m
(C) 2 m
(D) 1 m

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27. An electric heater supplies heat to a system at a rate of 100 W. If the system performs work at a rate of 75 J/s, then the rate at which internal energy increases will be:

(A) 75 W
(B) 100 W
(C) 125 W
(D) 25 W

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28. A galvanometer of resistance 100 Ω gives full scale deflection for a current of 1 mA. It is converted into an ammeter of range 0 − 10 A. The shunt required is:

(A) 0.01 Ω
(B) 0.10 Ω
(C) 1.0 Ω
(D) 0.001 Ω

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29. The peak value of an alternating current is 5 A and frequency is 60 Hz. How long will the current, starting from zero, take to reach the peak value?

(A) 1/120 s
(B) 1/60 s
(C) 1/30 s
(D) 1/240 s

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30. Two statements are given below:
A. When the forward bias voltage across a p-n junction diode increases above a certain threshold voltage, the diode current increases significantly.
B. This current is called reverse saturation current.
Choose the correct answer from the options given below:

(A) Both Statements A and B are true
(B) Statement A is true, but Statement B is false
(C) Both Statements A and B are false
(D) Statement A is false, but Statement B is true

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31. Which of the following statements are correct?
A. Inside a conductor, the electrostatic field is zero.
B. Electric field at the surface of a charged conductor does not depend on its surface charge density.
C. The interior of a charged conductor can have no excess charge in the static situation.
D. At the surface of a charged conductor, the electrostatic field must be normal to the surface at every point.
E. The electrostatic potential is zero everywhere inside a charged conductor.
Choose the correct answer from the options given below:

(A) A, B and D only
(B) A, C and E only
(C) A, C and D only
(D) C, D and E only

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32. For a metal of work function 6.6 eV, which of the following wavelengths of incident radiation does not give rise to the photoelectric effect?
(Take Planck's constant as 6.6×10^{-34} J s)

(A) 100 nm
(B) 150 nm
(C) 200 nm
(D) 50 nm

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33. In a concave lens, a ray of light emanating from the object parallel to the principal axis of the lens after refraction:

(A) passes through 2F, which is the radius of curvature of the lens.
(B) appears to diverge from the first principal focus.
(C) emerges parallel to the principal axis.
(D) passes through the second principal focus.

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34. A submarine is designed to withstand an absolute pressure of 100 atm. How deep can it go below the water surface?
(Consider the density of water = 1000 kg m^{-3}, 1 atm = 1 × 10^5 Pa and gravitational acceleration g = 10 m/s^2)

(A) 990 m
(B) 9900 m
(C) 99 m
(D) 9000 m

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35. Match List I with List II:
List-I (Electromagnetic wave) — List-II (Production)
A. Microwave — I. Electrons in atoms emit light when they move from a higher energy level to a lower energy level
B. Visible light — II. Radioactive decay of nucleus
C. Gamma rays — III. Vibration of atoms and molecules
D. Infra-red rays — IV. Klystron valve or magnetron valve
Choose the correct answer from the options given below:

(A) A-III, B-I, C-II, D-IV
(B) A-III, B-IV, C-I, D-II
(C) A-IV, B-I, C-II, D-III
(D) A-IV, B-III, C-II, D-I

Answer key and explanations

1. Answer: (D) 400

Time = 6 × 60 + 40 = 400 s. With c = 1 (one unit of length per second), distance = c × t = 400 units (light-seconds). Multiplying by 3 × 10^8 gives metres, not the new unit.

2. Answer: (D) A-II, B-III, C-IV, D-I

Young's modulus = stress/strain = (F/A)/(ΔL/L) = FL/(AΔL). Bulk modulus = −P/(ΔV/V) = −P V/ΔV, and compressibility is its reciprocal, −(1/ΔP)(ΔV/V). Poisson's ratio is lateral strain over longitudinal strain, (Δd/d)/(ΔL/L). Swapping bulk modulus with compressibility is the main trap.

3. Answer: (C) 150

With uniform angular acceleration, average speed = (600 + 1200)/2 = 900 rpm = 15 rev/s, so in 10 s the flywheel makes 15 × 10 = 150 revolutions. Answers like 900 come from treating rpm as rev/s or forgetting to convert minutes to seconds.

4. Answer: (D) 10.8 V

Terminal voltage V = E − Ir = 12 − 0.6 × 2 = 12 − 1.2 = 10.8 V. The 1.2 V is only the drop inside the battery, and 12 V ignores the internal resistance.

5. Answer: (A) √7/2

v_{rms} = √(3RT/M) depends only on temperature and molar mass, not on the mass ratio in the flask. At the same T, v(Ar)/v(Cl_2) = √(70/40) = √(7/4) = √7/2. Inverting the ratio gives 2/√7, and forgetting the square root gives 7/4.

6. Answer: (D) A-IV, B-III, C-I, D-II

E = hν gives the energy of a photon; diffraction and interference show the wave nature of light; λ = h/p is the de Broglie wavelength; and the Compton effect (photon–electron collisions) shows the particle nature of light.

7. Answer: (C) 2.1 × 10^{-10} m

Total energy E = −ke^2/(2r), so r = ke^2/(2|E|) = (9 × 10^9 × (1.6 × 10^{-19})²)/(2 × 3.4 × 1.6 × 10^{-19}) = (9 × 10^9 × 1.6 × 10^{-19})/6.8 = 2.1 × 10^{-10} m. This matches $4a_0$ = 4 × 0.53 Å for n = 2; dropping the factor 2 would give double.

8. Answer: (D) 1.2

Static friction must supply the box's acceleration: ma ≤ μmg, so a(max) = μg = 0.12 × 10 = 1.2 m s^{-2}. The mass cancels, so the 15 kg value is not needed.

9. Answer: (D) mgR/2

$W = \Delta U = -GMm/(2R) - (-GMm/R) = GMm/(2R) = mgR/2$, using $GM = gR^2$. Taking $mgh = mgR$ assumes g stays constant over a height as large as R.

10. Answer: (D) 7.7

Volume = $(0.090\ m)^3 = 7.29 \times 10^{-4}\ m^3$, so density = $5.580/7.29 \times 10^{-4} = 7.654 \times 10^3\ kg\ m^{-3}$. The side 9.0 cm has only two significant figures, so the result is rounded to two: $7.7 \times 10^3\ kg\ m^{-3}$. Keeping 7.654 or 7.65 claims more precision than the data allow, and 7.6 is a wrong rounding.

11. Answer: (B) 1.41 m/s

At the mean position all the mechanical energy is kinetic (taking PE = 0 there): $\frac{1}{2} \times 0.020 \times v^2 = 0.02$, so $v^2 = 2$ and v = 1.41 m/s. Using 20 kg instead of 0.020 kg, or forgetting the ½, gives the other values.

12. Answer: (A) K/4

$I = I_0 \cos^2(\varphi/2)$ with $\varphi = 2\pi \times$ (path difference)/λ. At path difference λ, $\varphi = 2\pi$ and $I = I_0 = K$. At λ/3, $\varphi = 2\pi/3$, so $I = K \cos^2(\pi/3) = K \times 1/4 = K/4$. Using $\cos(\pi/3)$ without squaring gives K/2.

13. Answer: (D) 15.9 kHz

$f_0 = 1/(2\pi\sqrt{(LC)}) = 1/(2\pi\sqrt{(10^{-3} \times 10^{-7})}) = 1/(2\pi \times 10^{-5}) = 10^5/6.283 \approx 15.9$ kHz. The resistance does not affect the resonance frequency; forgetting the 2π would give the angular frequency 100 krad/s.

14. Answer: (C) A is true, but B is false

Energy is only redistributed between bright and dark regions, so the total is conserved and the first statement holds. Interference and diffraction are shown by all waves, including sound, water waves and matter waves, so the claim that only light shows them is false.

15. Answer: (B) 0.8π rad

The wave number is $k = 2\pi \times 0.0080$ rad/cm. For $\Delta x = 0.5$ m = 50 cm, $\Delta\varphi = k\Delta x = 2\pi \times 0.0080 \times 50 = 0.8\pi$ rad. Using 0.5 without converting to centimetres gives 0.008π rad.

16. Answer: (D) 2 m s⁻²; tan⁻¹(3/4) with 8 N force

Resultant force = $\sqrt{(8^2 + 6^2)} = 10$ N, so $a = 10/5 = 2\ m\ s^{-2}$ along the resultant. Its angle θ with the 8 N force satisfies $\tan\theta = 6/8 = 3/4$. The angle $\tan^{-1}(4/3)$ is measured from the 6 N force, not the 8 N force.

17. Answer: (A) 0.5 × 10⁻⁶ J

Initial energy = $\frac{1}{2}CV^2 = \frac{1}{2} \times 200 \times 10^{-12} \times 100^2 = 1.0 \times 10^{-6}$ J. After sharing, the common voltage is 50 V and the total energy is $2 \times \frac{1}{2} \times 200 \times 10^{-12} \times 50^2 = 0.5 \times 10^{-6}$ J, so 0.5×10^{-6} J is lost. 1.0×10^{-6} J is the initial energy, not the loss, and the joule-sized values forget the pico prefix.

18. Answer: (C) 19.6 kW

Work = $mgh = 1000 \times 9.8 \times 20 = 1.96 \times 10^5$ J; power = $1.96 \times 10^5 / 10 = 1.96 \times 10^4$ W = 19.6 kW. 19.6 W misses the factor of 1000 in the unit.

19. Answer: (C) 0.02 cm

1 VSD = 16/20 MSD = 0.8 mm, so least count = 1 MSD − 1 VSD = 1 − 0.8 = 0.2 mm = 0.02 cm. Writing 0.2 cm forgets to convert millimetres to centimetres.

20. Answer: (C) B > E > A > D > C

The ruler falls freely from rest, so $d = \frac{1}{2}gt^2$ grows with reaction time. Ordering the times 0.22 > 0.21 > 0.20 > 0.19 > 0.18 s gives B > E > A > D > C. Reversing the order, or misplacing the 0.18 s and 0.19 s persons, gives the other sequences.

21. Answer: (C) 331 W

$R = V^2/P = 220^2/400 = 121\ \Omega$. At 200 V, $P = 200^2/121 = 40000/121 \approx 331$ W. 121 is the resistance in ohms, not the power, and the power does not stay at 400 W because it scales as V^2.

22. Answer: (D) 2.5 A, 2 A m²

$B = \mu_0 NI/(2r)$ gives $I = 2rB/(\mu_0 N) = (2 \times 0.05 \times 3.14 \times 10^{-3})/(4\pi \times 10^{-7} \times 100) = 3.14 \times 10^{-4}/1.257 \times 10^{-4} = 2.5$ A. Magnetic moment $m = NIA = 100 \times 2.5 \times \pi(0.05)^2 = 1.96 \approx 2\ A\ m^2$. Forgetting the 100 turns, or using diameter for radius, gives the other pairs.

23. Answer: (D) 1.8 × 10⁻⁴ volt

Moving normal to the shorter side, the flux changes as the 3 cm side crosses the boundary: $emf = Blv = 0.3 \times 0.03 \times 0.02 = 1.8 \times 10^{-4}$ V. Using the 8 cm side (motion normal to the longer side) gives 4.8×10^{-4} V.

24. Answer: (D) B and D are true, but A and C are false

Nuclear radius $R = R_0 A^{(1/3)}$, so volume $\propto R^3 \propto A$; it is the radius, not the volume, that goes as $A^{(1/3)}$. Mass defect is the difference between the total mass of the separated nucleons and the mass of the nucleus, not the electrons' mass (atom minus nucleus). So only the second and fourth statements hold.

25. Answer: (A) 12

Volume = mass/density = $19.926 \times 10^{-27} / 2.29 \times 10^{17} = 8.70 \times 10^{-44}$ m³. Also $V = (4/3)\pi R_0^3 A = (12.56/3) \times 1.728 \times 10^{-45} \times A = 7.23 \times 10^{-45} A$, so $A = 8.70 \times 10^{-44} / 7.23 \times 10^{-45} \approx 12$ (carbon-12). Dividing the mass by the nucleon mass would also give 12, so 19 or 20 are mistaken readings of 19.926.

26. Answer: (D) 1 m

T = 60/30 = 2 s. From $T = 2\pi\sqrt{(L/g)}$, $L = gT^2/(4\pi^2) = 9.8 \times 4/(4 \times 9.8) = 1$ m. Taking T = 2 s as the length, or forgetting to square T, gives the other values.

27. Answer: (D) 25 W

By the first law, dU/dt = dQ/dt − dW/dt = 100 − 75 = 25 W. Adding the work rate (175 W) or taking 125 W treats work done by the system as energy gained.

28. Answer: (A) 0.01 Ω

Shunt $S = I_g G/(I - I_g) = (10^{-3} \times 100)/(10 - 0.001) \approx 0.1/10 = 0.01\ \Omega$. Dropping a factor of ten in the current gives 0.1 Ω or 0.001 Ω.

29. Answer: (D) 1/240 s

$i = i_0 \sin \omega t$ rises from zero to the peak in a quarter period: $t = T/4 = 1/(4 \times 60) = 1/240$ s. 1/120 s is half a period, which brings the current back to zero.

30. Answer: (B) Statement A is true, but Statement B is false

Beyond the threshold (cut-in) voltage, the forward current rises sharply, so the first statement holds. That large current is the forward current due to majority carriers; the reverse saturation current is the tiny minority-carrier current under reverse bias, so the second statement is false.

31. Answer: (C) A, C and D only

In electrostatics the field inside a conductor is zero, any excess charge resides on the surface, and the surface field is normal to the surface, so those three statements hold. The surface field is $E = \sigma/\varepsilon_0$, so it does depend on surface charge density, and the potential inside is constant (equal to the surface value), not necessarily zero.

32. Answer: (C) 200 nm

Threshold wavelength $\lambda_0 = hc/\varphi = (6.6 \times 10^{-34} \times 3 \times 10^8)/(6.6 \times 1.6 \times 10^{-19}) = 1.875 \times 10^{-7}$ m ≈ 188 nm. Only radiation of wavelength shorter than this ejects electrons, so 200 nm fails while 50, 100 and 150 nm all work.

33. Answer: (B) appears to diverge from the first principal focus.

A concave lens is diverging: a ray parallel to the axis bends away and appears to come from the principal focus on the object side (the first principal focus). Passing through the second focus is the behaviour of a convex lens, and a ray through the optical centre, not one parallel to the axis, goes straight on.

34. Answer: (A) 990 m

Absolute pressure = P_atm + ρgh, so ρgh = 100 − 1 = 99 atm = 99×10^5 Pa and $h = 99 \times 10^5/(1000 \times 10) = 990$ m. Ignoring the atmospheric pressure would give 1000 m, which is not offered; the other values are slips of a factor of ten.

35. Answer: (C) A-IV, B-I, C-II, D-III

Microwaves are produced by special vacuum tubes such as klystrons and magnetrons; visible light by electronic transitions in atoms; gamma rays by radioactive decay of nuclei; and infrared by vibrations of atoms and molecules (hot bodies). Assigning molecular vibrations to microwaves is the main trap.

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