

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	Wave behaviour of matter is prominent at --- level : (A) Macroscopic (B) Mega structure (C) Microscopic (D) Any object size			
2	The points where AC crosses the time axis corresponds to phase : (A) $\frac{\pi}{2}$ or $3\frac{\pi}{2}$ (B) 0 or π (C) $\frac{\pi}{4}$ or $3\frac{\pi}{4}$ (D) 0 or $\frac{\pi}{2}$			
3	A galvanometer coil of resistance R_g gives full scale deflection with current I_g . What is required shunt resistance R_s = ---- if range of ammeter is $I = 2I_g$: (A) R_g (B) $2R_g$ (C) $R_g/2$ (D) $4R_g$			
4	A combination of two back to back PN junctions is --- : (A) Operational amplifier (B) Digital gate (C) Transistor (D) Photo diode			
5	The --- work on the principle of beats : (A) DC motors (B) Metal detectors (C) Choke coils (D) AC generators			
6	$1 \text{ J} = \text{--- eV}$: (A) 1.6×10^{-19} (B) 6.25×10^{18} (C) 9.6×10^{-18} (D) 9×10^9			
7	Faraday and Maxwell unified electric and --- force : (A) Weak nuclear (B) Strong nuclear (C) Gravitational (D) Magnetic			
8	Which is not true for ideal step up transformer : (A) $I_s < I_p$ (B) $P_{out} = P_{in}$ (C) $V_s > V_p$ (D) $N_s = N_p$			
9	A rod of length ℓ_o in a stationary frame is accelerated at speed of light. Its length measured perpendicular to its direction of motion is : (A) $\frac{\ell_o}{2}$ (B) Zero (C) ℓ_o (D) $2\ell_o$			
10	The slope of graph between charge and time for capacitor charging is large initially when the product RC is : (A) Small (B) Large (C) Intermediate (D) Infinite			
11	A ductile wire is stretched to double of its original length, %age elongation is --- : (A) 200% (B) 50% (C) 100% (D) 400%			
12	The fractional change in resistance is minimum for --- if temperature change is same for all : (A) Platinum (B) Nichrome (C) Copper (D) Constanton			
13	If ionization energy of hydrogen atom is E_o , the energy required to remove electron from hydrogen in state $n = 4$ is : (A) $\frac{E_o}{4}$ (B) $4E_o$ (C) $\frac{E_o}{16}$ (D) Zero			
14	The value of voltage gain of a transistor amplifier (common emitter) is of the order of : (A) Thousands (B) Millions (C) Fraction (D) Hundreds			
15	Energy required to remove all nucleons from nuclide of --- is maximum : (A) Fe^{58} (B) U^{235} (C) Ba^{141} (D) H^2			
16	In alternating current, --- behave like resistors : (A) Inductors (B) Capacitors (C) Transformers (D) Generators			
17	The potential of --- is least in CRO : (A) Anode (B) Screen (C) Cathode (D) Grid			