

## NAT I Engineering Physics

Sr	Questions	Answers Choice
1	A 50-volt battery is connected across 10-ohm resistor. The current is 4.5 A. The internal resistance of the battery is	A. Zero B. 0.5 $\Omega$ C. 1.1 $\Omega$ D. 5.0 $\Omega$
2	If yellow light emitted by sodium lamp in Young's double slit experiment is replaced by monochromatic blue light of the same intensity	A. Fringe width will decrease B. Fringe width will increase C. The fringe width will remain unchanged D. Fringes will become less intense
3	A capacitor acts as an infinite resistance for	A. AC B. DC C. Both AC and DC
4	If in a moving coil galvanometer a current $I$ produces a deflection $\theta$ then	A. $I \propto \tan \theta$ B. $I \propto \theta^2$ C. $I \propto \theta$ D. $I \propto \sqrt{\theta}$
5	A person standing on a rotating platform has his hands lowered. He suddenly outstretches his arms. The angular momentum	A. Becomes zero B. Increases C. Decreases D. Remains the same
6	What will be the duration of the day and night (in hour) if the diameter of the earth is suddenly reduced to half its original value the mass remaining constant?	A. 12 B. 6 C. 3 D. 2
7	Which of the following sources give discrete emission spectrum?	A. Incandescent electric bulb B. Sun C. Mercury vapour lamp D. Candle
8	A wire is stretched to double of its length. The strain is	A. 2 B. 1 C. Zero D. 0.5
9	Which of the following particle would experience the largest magnetic force when projected with the same velocity perpendicular to a magnetic field?	A. Proton B. Electron C. $He^{+}$ D. $Li^{+}$
10	The primary winding of transformer has 500 turns whereas its secondary has 5000 turns. The primary is connected to an a.c supply of 20 V, 50 Hz. The secondary will have an output of	A. 200 V, 50 Hz B. 2 V, 50 Hz C. 200 V, 500 Hz
11	The essential distinction between X-rays and y-rays is that	A. y-rays have smaller wavelength than X-rays B. y-rays emanate from nucleus while X-rays emanate from outer part of the atom C. y-rays have greater ionizing power than X-rays D. y-rays are more penetrating than X-rays
12	With the increase of temperature viscosity	A. Increase B. Decrease C. Remains same D. Doubles
13	One cannot see through fog because	A. Fog absorbs light B. The refractive index of fog is infinity C. Light suffers total reflection at the droplet in a fog D. Light is scattered by the droplets in fog
14	In which case application of angular velocity is useful?	A. When a body is rotating B. When velocity of body is in a straight line

		C. When velocity is in a straight line D. None of these
15	A p-n junction has a thickness of the order of	A. 1 cm B. 1 mm C. $10^{-6}$ cm D. $10^{-12}$ cm
16	In case of p-n junction diode at high value of reverse bias the current rises sharply The value of reverse bias is known as	A. Cut off voltage B. Zener voltage C. Inverse voltage D. Critical voltage
17	The dimensional formula of torque is:	A. $[ML^2T^{-2}]$ B. $[ML^{-2}T^{-2}]$ C. $[ML^{-1}T^{-2}]$ D. $[ML^2T^{-1}]$
18	If the amplitude of sound is doubled and the frequency reduced to one-fourth the intensity of sound at the same point will be	A. Increasing by a factor of 2 B. Decreasing by a factor of 2 C. Decreasing by a factor of 4 D. Unchanged
19	The angle between rectangular components of a vector is	A. $0^\circ$ B. $60^\circ$ C. $90^\circ$ D. $120^\circ$
20	Steel is preferred for making springs over copper. Why?	A. Steel is cheaper B. Young's modulus of steel is more than that of copper C. Young's modulus of copper is more than that of steel D. Steel is less likely to be oxidized