

## NAT I Engineering Physics

Sr	Questions	Answers Choice
1	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
2	A charge Q is divided into two parts q and Q - q and separated by a distance R. the force of repulsion between them will be maximum when:	A. $q = Q/4$ B. $q = Q/2$ C. $q = Q$ D. None of these
3	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
4	If 2.2 kilowatt power is transmitted through a 10 ohm line at 22000 volt, the power loss in the form of heat will be	A. 0.1 watt B. 1 watt C. 10 watt D. 100 watt
5	In a simple harmonic motion the kinetic energy (KE) and the potential energy (PE), are such that throughout the motion	A. KE remains constant B. PE remains constant C. KE/PE is constant D. KE + PE remains constant
6	The volt/metre is the unit of:	A. Potential B. Work C. Force D. Electric field intensity
7	Bernoulli's equation is based upon law of conservation	A. Mass B. Momentum C. Energy D. None of these
8	A couple produces	A. Purely linear motion B. Purely rotational motion C. Linear and rotational motion D. No motion
9	For obtaining appreciable extension the wire should be	A. Short and thin B. Long and thin C. Short and thick D. Long and thick
10	Relation between pressure (P) and energy (E) of a gas is	A. $P = 2/3 E$ B. $P = 1/3 E$ C. $P = 3/2 E$ D. $P = 3 E$
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	If two non-zero vector $\vec{A}$ and $\vec{B}$ are parallel to each other, then $\vec{A} \cdot \vec{B}$ is equal to	A. Zero B. $AB$ C. $A + B$ D. $A - B$
13	With the propagation of a longitudinal wave through a material medium the quantities transmitted in the propagation direction are	A. Energy momentum and mass B. Energy C. Energy and mass D. Energy and linear momentum
		A. They produce sounds of equal intensity B. They produce sounds of equal

14	Two sources of sound are said to be coherent if	frequency C. They produce sound waves vibrating with the same phase D. They produce sound waves with zero or constant phase difference all instant of time
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	A prism splits a beam of white light into its seven constituent colors this is so because	A. Phase of different colors is different B. Amplitude of different colors is different C. Energy of different colors is different D. Velocity of different colors is different
17	In which of the following states does the incandescent substance give continuous spectrum?	A. Vapours in atomic state B. Vapours in molecular state C. Solid or fluid in bulk state D. Solid or fluid in plasma state
18	The time period of a simple pendulum is 2 seconds if its length is increased by 4 times then its period becomes	A. 16 s B. 12 s C. 8 s D. 4 s
19	The dot product of two vectors is negative when	A. They are parallel vectors B. They are anti-parallel vectors C. They are perpendicular vectors D. None of the above is correct
20	A monochromatic source of light is placed at a large distance $d$ from a metal surface Photoelectrons are ejected at rate $n$ , kinetic energy being $E$ . If the source is brought nearer to distance $d/2$ , the rate and kinetic energy per photoelectron become nearly	A. $2n$ and $2E$ B. $4n$ and $4E$ C. $4n$ and $E$ D. $n$ and $4E$