

## NAT I Engineering Physics

Sr	Questions	Answers Choice
1	Choose the correct statement	<p>A. Both an ammeter and voltmeter should have small resistance</p> <p>B. Both an ammeter and a voltmeter should have large resistance</p> <p>C. An ammeter should have large resistance and a voltmeter should have small resistance</p> <p>D. An ammeter should have small resistance and a voltmeter should have large resistance</p>
2	Two electric bulbs of 200 W and 100 W have same voltage. If R <sub>1</sub> and R <sub>2</sub> be their resistance respectively then	<p>A. <math>R_1 = 2R_2</math></p> <p>B. <math>R_1 = 4R_2</math></p> <p>C. <math>R_1 = 2R_2</math></p> <p>D. <math>R_1 = 4R_2</math></p>
3	If the dot product of two non-zero vectors vanishes the vectors will be	<p>A. In the same direction</p> <p>B. Opposite to each other</p> <p>C. Perpendicular to each other</p> <p>D. Zero</p>
4	A pendulum clock set to give correct time in Karachi is taken to Quetta it would give correct time if	<p>A. The mass of the pendulum is increased</p> <p>B. The mass of the pendulum is decreased</p> <p>C. The length of the pendulum is increased</p> <p>D. The length of the pendulum is decreased</p>
5	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	<p>A. 0.1 watt</p> <p>B. 1 watt</p> <p>C. 10 watt</p> <p>D. 100 watt</p>
6	In a simple harmonic motion (SHM) which of the following does not hold?	<p>A. The force on the particle is maximum at the ends</p> <p>B. The acceleration is minimum at the mean position</p> <p>C. The potential energy is maximum at the mean position</p> <p>D. The kinetic energy is maximum at the mean position.</p>
7	Two point charges placed at distance of 20 cm in air repel each other with a certain force. When a dielectric slab of thickness 8 cm and dielectric constant K is introduced between these point charges force of interaction becomes half of its previous value. Then K is approximately.	<p>A. 2</p> <p>B. 4</p> <p>C. <math>\sqrt{2}</math></p> <p>D. 1</p>
8	Which of the following sources give discrete emission spectrum?	<p>A. Incandescent electric bulb</p> <p>B. Sun</p> <p>C. Mercury vapour lamp</p> <p>D. Candle</p>
9	How does the Young's modulus vary with the increase of temperature?	<p>A. Decrease</p> <p>B. Increase</p> <p>C. Remains constant</p> <p>D. First increases and then decreases</p>
10	A moving charge will gain energy due to the application of	<p>A. Electric field</p> <p>B. Magnetic</p> <p>C. Both of these</p> <p>D. None of these</p>

11	The peak voltage in a 200 volt A.C supply is nearly	A. 220 B. 253 C. 311
12	In a Millikan's oil drop experiment the charge on an oil drop is calculated to be $6.35 \times 10^{-19}$ C. The number of excess electrons on the drop is	A. 3.9 B. 4 C. 4.2 D. 6
13	Electrons in the atom are held in the atom due to	A. Coulomb forces B. Nuclear forces C. Gravitational forces D. Van der Waal's forces
14	Which one of the following phenomena is not explained by Huygen's construction of wavefront?	A. Refraction B. Reflection C. Diffraction D. Origin of spectra
15	A 2 kg body and a 3 kg body have equal momentum if the kinetic energy of 3 kg body is 10 J, the KE of 2 kg body will be	A. 6.66 J B. 15 J C. 22.5 J D. 45 J
16	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
17	A train of 150 m length is going towards north direction at a speed of $10 \text{ ms}^{-1}$ A parrot flies at a speed of $5 \text{ ms}^{-1}$ towards south direction parallel to the railway track, The time taken by the parrot to cross the train is equal to	A. 12 s B. 8 s C. 15 s D. 10 s
18	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
19	Mechanical waves on the surface of a liquid are	A. Transverse B. Longitudinal C. Torsional D. Both transverse and longitudinal
20	The nucleus ${}^{12}_{6}\text{C}$ absorbs an energetic neutron and emits a beta particle ( $\beta$ ) The resulting nucleus is	A. ${}^{14}_{7}\text{N}$ B. ${}^{14}_{5}\text{B}$ C. ${}^{13}_{7}\text{N}$ D. ${}^{13}_{6}\text{N}$