

## NAT I Engineering Physics

Sr	Questions	Answers Choice
1	The terminal velocity of a small size spherical body of radius $R$ moving in a fluid varies as	A. $R$ B. $R^2$ C. $1/R$ D. $(1/R)^2$
2	When a $\text{Na}^+$ ion and a $\text{Cl}^-$ ion are placed in air a force $F$ acts between them when they are separated by a distance of 1 cm from each other the permittivity of air and the dielectric constant of water are $\epsilon_0$ and $K$ respectively When a piece of salt is placed in water then the force between $\text{Na}^+$ and $\text{Cl}^-$ ions separated by a distance of 1 cm will be	A. $F$ B. $FK/\epsilon_0$ C. $F/K\epsilon_0$ D. $F/K$
3	A bullet is shot from a rifle. As a result the rifle recoils, The kinetic energy of rifle as compared to that of bullet is	A. Less B. Greater C. Equal D. Cannot be concluded
4	The direction of induced current is such that it opposes the very cause that has produced it This is the law of	A. Lenz B. Faraday C. Kirchoff D. Fleming
5	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. $A - B$
6	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
7	Which of the following is equal to: joule x ohm / volt x second ?	A. Ampere B. Volt C. Watt D. Tesla
8	Two forces of 10N and 15N are acting simultaneously on an object in the same direction. Their resultant is	A. Zero B. 5N C. 25N D. 150N
9	Absolute temperature can be calculated by	A. Mean square velocity B. Motion of the molecule C. Both (A) and (B) D. None of these
10	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. $5.0\Omega$
11	In LCR series AC circuit the phase angle between current and voltage is	A. Any angle between 0 and $\pm\pi/2$ B. $\pi/2$ C. $\pi$ D. Any angle between 0 and $\pi/2$
12	Which of the following four statements is false?	A. A body can have zero velocity and still be accelerated B. A body can have a constant velocity and still have a varying speed C. A body can have a constant speed and still have a varying velocity D. The direction of the velocity of a acceleration is constant
13	A pendulum clock set to give correct time in Karachi is taken to Quetta it would give correct time if	A. The mass of the pendulum is increased B. The mass of the pendulum is decreased C. The length of the pendulum is increased D. The length of the pendulum is decreased

14	A body moves a distance of 10 m along a straight line under the action of a force of 5 Newtons, if the work done is 25 joules the angle which the force takes with the direction of motion of the body is:	A. $0^\circ$ B. $30^\circ$ <b>C. <math>60^\circ</math></b> D. $90^\circ$
15	A body of mass 2 kg is thrown up vertically with K.E of 490 joules If the acceleration due to gravity is $9.8 \text{ m/s}^2$ the height at which the K.E of the body becomes half its original value is give by:	A. 50 m B. <b>12.5 m</b> C. 25 m D. 10 m
16	For production of beats the two sources must have	A. Different frequencies and same amplitude <b>B. Different frequencies</b> C. Different frequencies same amplitude and same phase D. Different frequencies and same phase.
17	If the earth were to rotate faster than its present speed the weight of an object will	A. Increase at the equator but remain unchanged at the poles <b>B. Decrease at the equator but remain unchanged at the poles</b> C. Remain unchanged at the decrease but decrease at the poles D. Remain unchanged at the equator but increase at the poles
18	Which of the following is not thermo dynamical function?	A. Enthalpy <b>B. Work done</b> C. Gibb's energy D. Internal energy
19	The percentage errors in the measurements of mass and speed are 2% and 3% respectively. How much estimate of the kinetic energy obtained by measuring mass and speed	A. 11% <b>B. 8%</b> C. 5% D. 1%
20	At a certain instant a stationary transverse wave is found to have maximum kinetic energy the appearance of string of that instant is:	A. Sinusoidal shape with amplitude A/3 B. Sinusoidal shape with amplitude A/2 C. Sinusoidal shape with amplitude A <b>D. Straight line</b>