NAT I Engineering Physics

Sr	Questions	Answers Choice
1	If two non-zero vector $\bar{A}$ and $\bar{B}$ are parallel to each other, then $\bar{A}, \bar{B}$ is equal to	A. Zero B. AB C. A + B D. A - B
2	A ten-ohm electric heater operates on a 110 V line Calculate the rate at which it develops heat in watts:	A. 1310 W B. 670 W C. 810 W D. 1210 W
3	There are discrete energy levels in atoms. It was first experimentally demonstrated by	A. Rutherford's experiment B. Frank Hertz experiment C. Marsden's experiment D. Sommerfield experiment
4	The peak voltage in a 200 volt A.C supply is nearly	A. 220 B. 253 C. 311
5	The half life of a radio-isotope is 5 years The fraction of atoms decayed in this substance after 15 years will be	A. 1 B. 3/4 C. 7/8 D. 5/8
6	The dimensional formula of toque is:	A. [ML²T²] B. [ML T ²] C. [ML ⁻¹T ⁻²] D. [ML ⁻²T ⁻²]
7	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
8	Energy is stored in the choke coil in the form of	A. Heat B. Magnetic energy C. Electric energy D. Electro -magnetic energy
9	Boyle's law is applicable in	A. Isochoric process B. Isothermal process C. Isobaric process D. Isotonic process
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	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 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. 12.5 m C. 25 m D. 10 m
12	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
13	Two forces are acting together on an object. The magnitude of their resultant is minimum	A. 0° B. 60° C. 120°

	when the angle between the force is.	C. 120° D. 180°
14	Bernoulli's equation is based upon law of conservation	A. Mass B. Momentum C. Energy D. None of these
15	Two bodies with masses M_A and M_B are moving with equal kinetic energy.Their linear moments are numerically in a ratio $\|P_A\| : \|P_B\|$ will be:	A. M_B: M_A B. M_A: M_B C. √M_A : √M_B D. M_A²: M_B²
16	With the increase of temperature viscosity	A. Increase B. Decrease C. Remains same D. Doubles
17	The mass defect for the nucleus of helium is 0.0303 a.m.u What is the binding energy per nucleon for helium in MeV?	A. 28 B. 7 C. 4 D. 1
18	The product of the pressure and volume of an ideal gas is	A. A constant B. Approximately equal to the universal gas constant C. Directly Proportional to its temperature D. Inversely proportional to its temperature
19	The distance between node and anti-node is	A. λ B. λ/2 C. λ/4 D. 2λ
20	The nucleus 6C12 absorbs an energetic neutron and emits a beta particle (β) The resulting nucleus is	A. ₇N¹⁴ B. ₅B¹³ C. ₇N¹³ D. ₆N¹³