NAT I Engineering Physics

Sr	Questions	Answers Choice
1	In an AC circuit a resistance of R ohm i connected in series with an inductance L if phase angle between voltage and current be 45^{o} the value of inductive reactance will be	A. R/4 B. R/2 C. R
2	The distance between node and anti-node is	A. λ B. λ/2 C. λ/4 D. 2λ
3	The average binding energy of a nucleon inside an atomic nucleus is about	A. 8 MeV B. 8 eV C. 8 Joules D. 8 ergs
4	Two points charges A and B separated by a distance R attract each other with a force of 12 x 10^{-3} N. The force between A and B when the charges on them are doubled and distance is halved	A. 1.92 N B. 19.2 N C. 12 N D. 0.192 N
5	For production of beats the two sources must have	A. Different frequencies and same amplitude B. Different frequencies C. Different frequencies same amplitude and same phase D. Different frequencies and same phase.
6	The sum of the magnitude of two forces acting at a point is 18 and the magnitude of their resultant is 12. If the resultant is at 90° with the force of the smaller magnitude then their magnitude are:	A. 3, 15 B. 4, 14 C. 5, 13 D. 6, 12
7	A photocell with a constant p.d of V volt across it illuminated by a point source from a distance of 25 cm. When the source is moved to a distance of 1 m, the electrons emitted by the photocell	A. Carry 1/4th their previous energy B. Are 1/6th as numerous as before C. Are 1/4th as numerous as before D. Carry 1/4th their previous momentum
8	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
9	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
10	A voltmeter has resistance of 2000 ohms and it can measure up to 2V. If we want to increase its range to 10V then required resistance in series will be	A. 2000 Ω B. 4000 Ω C. 6000 Ω D. 8000 Ω
11	When n-type of semiconductor is heated	A. Number of electrons increases while that of holes decreases B. Number of holes increases while that of electrons decreases C. Number of electrons and holes remains same D. Number of electrons and holes increases equally
12	To make the frequency double of na oscillator we have to	A. Double the mass B. Half the mass C. Quadruple the mass D. Reduce the mass to one-fourth
13	A bullet is short 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

14	A couple produces	A. Purely linear motion B. Purely rotational motion C. Linear and rotational motion D. No motion
15	The frequency of the incident light falling on a photosensitive metal plate is doubled the kinetic energy of the emitted photoelectrons is	A. Double the earlier value B. Unchanged C. More than doubled D. Less than doubled
16	Which of the following lists of physical quantities consists only of vectors:	A. Time,temperature,velocity B. Force,volume,momentum C. Velocity,acceleration,mass D. Force,acceleration,velocity
17	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
18	In an ac circuit with voltage V and current 1 the power dissipated is	A. VI B. 1/2 VI C. 1/√2 VI D. Depends on the phase between V and 1
19	Which of the following is a scalar quantity	A. Density B. Displacement C. Torque D. Weight
20	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