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Roll No

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute)

Affiliated to Dr. A.P.J. Abdul Kalam Technical University, Uttar Pradesh, Lucknow

B.TECH

FIRST YEAR (SEMESTER-II) THEORY EXAMINATION (2020-2021)

(Objective Type)

Subject Code: AAS0201B

Subject: Engineering Physics

Max. Mks. : 70

Time : 70 Minutes

General Instructions:

All questions are compulsory.

Question No- 1 to 15 are objective type question carrying 2 marks each.

Question No- 16 to 35 are also objective type/Glossary based question carrying 2 marks each.

Q.No	Question Content	Question Image	Category	Sub Category	Marks	Options Randomization	Type	Difficulty	Correct	Option1	Option2	Option3	Option4
1	Length contraction happens only		Single Choice Questions	Single Choice Questions	2		Single Choice	Smart	Along direction of motion	Perpendicular to direction of motion	Along direction of motion	Parallel to direction of motion	None of these
2	All the inertial frames are equivalent” this statement is called the principle of_____.		Single Choice Questions	Single Choice Questions	2		Single Choice	Smart	Relative motion	Relative motion	Equivalence	Inertia	Correspondence
3	The rest mass of an electron is m0. What would be its mass it moves with velocity 0.6c?		Single Choice Questions	Single Choice Questions	2		Single Choice	Smart	5/4 m0	3/2 m0	4/3 m0	5/4 m0	6/5 m0
4	De-Broglie wavelength for an electron		Single Choice Questions	Single Choice Questions	2		Single Choice	Smart	λ= 12.28/√ V) Å	λ= 12.28/√ V) Å	λ= 1.28/√ V) Å	λ= 1.228/√ V) Å	λ= 122.8/√ V) Å
5	Calculate the de-broglie wavelenght associated with proton moving with velocity (1/20) times velocity of light.		Single Choice Questions	Single Choice Questions	2		Single Choice	Smart	2.64 X 10 -14 m	7 X 10 -14 m	2.64 X 10 -14 m	2.64 X 10 -24 m	9X 10 -14 m
6	Particle velocity is equal to ?		Single Choice Questions	Single Choice Questions	2		Single Choice	Smart	Group velocity	Phase velocity	Group velocity	Velocity of light	None of these
7	The interference phenomenon can take place		Single Choice Questions	Single Choice Questions	2		Single Choice	Smart	All of above	In transverse waves only	In Longitudinal waves only	In standing waves only	All of above
8	Two coherent sources of light produced destructive interference when phase difference between them is		Single Choice Questions	Single Choice Questions	2		Single Choice	Smart	π/2	0	π/2	π/4	π
9	In the diffraction pattern due to single slit, the width of the central maximum will be		Single Choice Questions	Single Choice Questions	2		Single Choice	Smart	Greater for a narrow slit	Greater for a narrow slit	Less for a narrow slit	Greater for a broad slit	Less for a broad slit
10	Number of lattice points in a primitive cell is		Single Choice Questions	Single Choice Questions	2		Single Choice	Smart	One	One	Two	Four	Depends on type of bravais lattice
11	Coordination number in simple cubic crystal structure		Single Choice Questions	Single Choice Questions	2		Single Choice	Smart	6	6	2	3	4
12	Crystal Structure is obtained by the addition of Lattice and _____		Single Choice Questions	Single Choice Questions	2		Single Choice	Smart	Basis	Unit cell	Primitive cell	Unit vectors	Basis
13	The temperature at which a conductor becomes a superconductor is known as		Single Choice Questions	Single Choice Questions	2		Single Choice	Smart	Critical temperature	Curie temperature	Onne's temperature	Critical temperature	None of these
14	A superconductor behaves like		Single Choice Questions	Single Choice Questions	2		Single Choice	Smart	A diamagnetic material	A diamagnetic material	A Paramagnetic material	A Ferromagnetic material	None of These
15	Which of the following form of pure carbon is known as Buckyball?		Single Choice Questions	Single Choice Questions	2		Single Choice	Smart	Fullerene	Diamond	Graphite	Fullerene	None of These
16	Under Galilean transformation, velocity is_____.		Glossary I	Glossary I	2		Single Choice	Smart	variant	invariant	variant	constant	changes with frame of reference

Q.No	Question Content	Question Image	Category	Sub Category	Marks	Options Randomization	Type	Difficulty	Correct	Option1	Option2	Option3	Option4
17	Under Galilean transformation, acceleration is_____.		Glossary I	Glossary I	2		Single Choice	Smart	invariant	invariant	Variant	Constant	Changes with Frame of Reference
18	Under Lorentz transformation, mass and time _____.		Glossary I	Glossary I	2		Single Choice	Smart	Changes With frame of Reference	Invariant	Variant	Constant	Changes With frame of Reference
19	Under Lorentz transformation, speed remains _____.		Glossary I	Glossary I	2		Single Choice	Smart	Constant	Invariant	Variant	Constant	Change with Frame of Reference
20	Phase velocity_____.		Glossary II	Glossary II	2		Single Choice	Smart				Vp = / v	
21	Group velocity is _____.		Glossary II	Glossary II	2		Single Choice	Smart				Vp = / v	
22	Uncertainty in velocity is _____.		Glossary II	Glossary II	2		Single Choice	Smart				Vp = / v	
23	Particle velocity is _____.		Glossary II	Glossary II	2		Single Choice	Smart	Vp = / v			Vp = / v	
24	Example of inference due to division of wave front is		Glossary III	Glossary III	2		Single Choice	Smart	Young’s double slit experiment	Opaque disc	Young’s double slit experiment	Single slit	Newton’s ring
25	Example of inference due to division of amplitude is _____.		Glossary III	Glossary III	2		Single Choice	Smart	Newton’s ring	Opaque disc	Young’s double slit experiment	Single slit	Newton’s ring
26	Example of Fresnel diffraction _____.		Glossary III	Glossary III	2		Single Choice	Smart	Opaque disc	Opaque disc	Young’s double slit experiment	Single slit	Newton’s ring
27	Example of Fraunhoffer diffraction _____.		Glossary III	Glossary III	2		Single Choice	Smart	Single slit	Opaque disc	Young’s double slit experiment	Single slit	Newton’s ring
28	Packing efficiency for simple cubic lattice is		Glossary IV	Glossary IV	2		Single Choice	Smart	52%	34%	68%	52%	74%
29	Packing efficiency for body centered cubic lattice is _____.		Glossary IV	Glossary IV	2		Single Choice	Smart	68%	34%	68%	52%	74%
30	Packing efficiency for face centered cubic lattice is _____.		Glossary IV	Glossary IV	2		Single Choice	Smart	74%	34%	68%	52%	74%
31	Packing efficiency for diamond lattice is _____.		Glossary IV	Glossary IV	2		Single Choice	Smart	34 %	34 %	68%	52%	74%
32	A superconductor behaves like diamagnetic substance because of value of magnetic field inside the superconductor ____.		Glossary V	Glossary V	2		Single Choice	Smart	0 K	4.2 K	0 K	Critical magnetic field	10-9 m
33	The minimum value of magnetic field at which superconductor loses its superconductivity is called _____.		Glossary V	Glossary V	2		Single Choice	Smart	Critical magnetic field	4.2 K	0 K	Critical magnetic field	10-9 m
34	The value of 1 nanometer is _____.		Glossary V	Glossary V	2		Single Choice	Smart	10-9 m	4.2 K	0 K	Critical magnetic field	10-9 m
35	The temperature at which mercury becomes superconductors ____.		Glossary V	Glossary V	2		Single Choice	Smart	4.2 K	4.2 K	0 K	Critical magnetic field	10-9 m