JAMIA HAMDARD

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B.Tech CSE/AI/ECE-2nd Semester

Applied Physics - II, BTCSE/BTCSEAI/BTECE-201

Time Allowed: 2.5 hrs. Max.Marks:60

Section – A

Instruction - All questions in this section are compulsory. Each question carries 5 marks.

4x5=20

Q. N.	Questions	Marks	CO	BL
1.	Define Avalanche and Zener Breakdown.	5	CO1	L2
2.	Derive the expression for average Kinetic and potential energy of a simple harmonic oscillator	5	CO4	L1
3.	What is Equation of Continuity? Derive it	5	CO2	L3
4.	Explain Bragg's law and derive its equation	5	CO5	L4

Section-B

Instructions - There are six questions in this section. You are required to attempt any 4 questions out of 6 questions. Each question carries equal marks.

4x10=40

Q. N.	Questions	Marks	CO	BL
1.	Starting from Maxwell's equations in free space, deduce EM wave propagation equation and calculate the velocity of propagation.	10	CO2	L2
2.	Discuss particle in a box problem in one dimension in quantum mechanics. Find out the energy eigen values and wave function.	10	CO3	L4
3.	Describe Schrodinger time independent equation. What information do you get from the solution of this equation?	10	CO3	L2
4.	What is a damped harmonic oscillator? Discuss its solution in two cases (I) underdamping and (II) critical damping	10	CO4	L4
5.	Discuss the production of X-rays in detail. What do you understand by continuous and characteristic X-rays?	10	CO5	L3
6.	What is Ampere's inconsistency? How did Maxwell modified it	10	CO2	L5

BL-Bloom's taxonomy levels (1-Remembering, 2-Understanding, 3-Applying,4-Analysing, 5-Evaluating, 6-Creating)

CO- Course Outcome