SECTION - B (35 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Briefly Explain the Michelson Method and Mention its Outcome.	K5	CO1
		(OR)		
	11.b.	Determine the Diameter of a Thin Wire by Air Wedge Method.		
2	12.a.	Discuss the vector model of the atom and explain the different quantum numbers associated with it.	K6	CO2
		(OR)		
	12.b.	Construct the magnetic dipole moment of electron due to orbital and spin motion.		
3	13.a.	What is the importance of radiation detectors in nuclear physics? List the steps involved in construction and working of ionization chamber.	K4	CO3
		(OR)		
	13.b.	Distinguish the liquid drop model and shell model.		
4	14.a.	State the fundamental postulates of the special theory of relativity. Derive the Lorentz transformation equations.	K5	CO4
		(OR)		
	14.b.	Explain Heisenberg's uncertainty principle and derive it.		
5	15.a.	Analyze the construction and working of a Zener diode.	K4	CO5
		(OR)		
	15.b.	State and examine De Morgan's theorems.		

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Explain Fresnel's explanation of rectilinear propagation of light.	K5	CO1
2	17	Discuss the Stern and Gerlach experiment and indicate the importance of the results obtained.	K6	CO2
3	18	With a neat diagram, explain the working and uses of the Geiger–Müller counter.	K4	CO3
4	19	Describe Einstein's mass–energy relation $E=mc^2$ and give some evidence to prove its validity.	K4	CO4
5	20	Explain in detail how NAND and NOR gates are called universal logic gates.	K5	CO5

Z-Z-Z END

TOTAL PAGES: 2

22CHU411N/22BCU415N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2026
(Fourth Semester)

Common to Branches- **CHEMISTRY & BIOCHEMISTRY**

PHYSICS - II

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	In an interference pattern, the intensity at a point is maximum if the phase difference between the two interfering light beams at that point is properly aligned. (a) an odd multiple of π (b) a multiple of π (c) an integral multiple of π d) none of these	K1	CO1
	2	Polarization of light proves the: (a) Corpuscular nature of light b) Quantum nature of light (c) Transverse nature of light (d) Longitudinal nature of light	K2	CO1
2	3	The vector atom model was introduced to explain: (a) Mass defect b) Isotopes (c) Fine structure of spectral lines d) Continuous spectra	K2	CO2
	4	The magnetic dipole moment of an electron is: (a) A scalar quantity b) A vector quantity (c) Imaginary (d) A persisting quantity	K1	CO2
3	5	Which of the following numbers is not included in the magic numbers? (a) 28 (b) 82 (c) 18 (d) 20	K1	CO3
	6	The main function of a moderator in a nuclear reactor is: (a) Accelerate the neutrons (b) Slow down the neutrons (c) Absorb the neutrons (d) Emit the neutrons	K2	CO3
4	7	If the uncertainty in the measurement of time of any physical event is infinity, then the uncertainty in the measurement of energy will be: (a) 0 (b) ∞ (c) h (d) h/2π	K1	CO4
	8	Which of the following is not an example of mass–energy equivalence? (a) Pair production (b) Pair annihilation (c) Presence of μ-mesons in the earth's atmosphere (d) Nuclear fission	K2	C04
5	9	A p–n junction function that radiates energy as light instead of heat is called: (a) LED (b) Photo-diode (c) Photocell (d) Zener diode	K1	CO5
	10	The universal gate is: (a) NAND gate (b) OR gate (c) NOT gate (d) AND gate	K2	CO5

Cont...