Enrollment No: Exam Seat No: C. U. SHAH UNIVERSITY Summer Examination-2020					
Subject Nan	ne : Modern Physics				
Subject Code: 4SC03PHE1		Branch: B.Sc. (Chemistry)			
Semester: 3	Date: 11/03/2020	Time: 02:30 To 05:30	Marks: 70		
(2) Instr(3) Draw	of Programmable calculator & any of uctions written on main answer book of neat diagrams and figures (if necessime suitable data if needed.	k are strictly to be obeyed.	rohibited.		
Q-1	Attempt the following questions:		(14)		
b) c) d) e) f) g) h) i) j) k) l) m) n)	Define Viscosity. State Stoke's law. What is a Cantilever? Differentiate between macroscopic Give the statement of Liouville's the How is anomalous Zeeman effect of Enlist the types of spectra. State any one postulate of special the Give the expression for Bragg's law Define Fluorescence. Give the difference between absorptive the Galilean transformation. Define Auger effect. What is an ensemble? four questions from Q-2 to Q-8	heorem. different from normal Zeeman heory of relativity. w of diffraction.	effect?		
Q-2 a)	Attempt all questions Based on the principles of relativity	y, explain the concept of lengtl	(14) h (07)		
b)	contraction. Write a note on time dilation.	y, remine the consequence tenge	(07)		

Q-3 **Attempt all questions (14)** a) Derive Poiseuelle's expression for flow of liquid through a tube. (07)**b)** Explain with necessary diagrams, the Michelson-Morley experiment. (07)**Attempt all questions** Q-4 **(14)** a) Derive the expression for distribution of particles in Microcanonical (07)ensemble. **b)** Give an account on Gibb's paradox. (07)Q-5 **Attempt all questions (14)** Write a short note on equal a priori probability. (05)



	b)	Explain and derive the expression for the bending moment of a beam.	
	c)	What is the significance of Reynold's number?	(02)
Q-6		Attempt all questions	(14)
	a)	Differentiate between LS and jj coupling.	(04)
	b)	Write a note on Zeeman effect.	(07)
	c)	How is Stark effect an electric analogue of Zeeman effect?	(03)
Q-7		Attempt all questions	(14)
	a)	Explain with suitable diagrams how X-Rays are produced?	(08)
	b)	Based on X-Ray diffraction from a crystal structure, derive the Bragg's law.	(06)
Q-8		Attempt all questions	(14)
	a)	Write a note on absorption and emission spectra.	(08)
	b)	What is a cantilever? Mention its different types and applications.	(06)

