## **C.U.SHAH UNIVERSITY** Winter Examination-2018

Subject Name:	<b>Physics</b>	- II
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	Subject	Code: 4SC02PHY1	Branch: B.Sc. (All)	
	Semester	r: 2 Date: 25/10/2	2018 Time: 02:30 To 05:30	Marks: 70
	Instructio	ons:		
	(1) U	Use of Programmable calcul	lator & any other electronic instrum	ent is prohibited.
	(2) I	instructions written on main	answer book are strictly to be obey	ed.
	(3) I	Draw neat diagrams and figu	ures (if necessary) at right places.	
	(4) A	Assume suitable data if need	led.	
Q-1		Attempt the following qu	iestions:	(14)
	a)	State Bragg's law.		
	<b>b</b> )	Differentiate between scal	ars and vectors.	
	<b>c</b> )	What are N type semicond	luctors?	
	<b>d</b> )	Give the full form of LED		
	e)	What is the function of rec	ctifiers?	1 \
	I)	Draw the planes in cubic c	erystal having Miller Indices : (11	[)
	<b>g</b> ) <b>b</b> )	Define specific real.	halp of a figure	
	i)	Name the different types of	of filter circuits	
	i)	What is a transistor?	inter circuits.	
	J) k)	Give the difference betwee	en LED and photodiode.	
	l)	Define Ripple factor.		
	<b>m</b> )	What do you mean by forv	ward bias condition?	
	n)	Define Mechanical waves.		
Atte	mpt any f	four questions from Q-2 to	) Q-8	
Q-2		Attempt all questions		(14)
	a)	Explain the principle, consproduction of X-Rays.	struction and working of the apparat	tus used for the (09)
	<b>b</b> )	Derive the Bragg's law of	Diffraction	(05)
0-3		Attempt all questions		(14)
	a)	Distinguish between crysta	alline solids and amorphous solids.	(04)
	<b>b</b> )	Explain the procedure to o	btain Miller indices.	(05)
	<b>c</b> )	Write a note on NaCl crys	tal structure.	(05)
Q-4		Attempt all questions		(14)
	a)	Explain the construction a	nd working of light emitting diode.	(07)
o -	b)	Explain the working of a p	photodiode and also describe its cha	racteristics. (07)
Q-5		Attempt all questions	de? Discuss the Ferrierd and Deres	(14)
	a)	what is a P-IN junction did	bue: Discuss the Forward and Reven	se biasing of a $(07)$



		diode with circuit diagrams and explain its characteristics.	
	b)	Discuss Melde's experiment for longitudinal and transverse modes of vibration.	(05)
	<b>c</b> )	Define: i) Lattice and ii) Coordination number.	(02)
Q-6		Attempt all questions	(14)
-	a)	What is a rectifier? Explain a full wave rectifier in detail with the help of a circuit	(07)
		diagram giving its construction, working.	
	<b>b</b> )	Discuss Stoke's law and derive its formula.	(07)
		Discuss the measurement of viscosity by Stoke's method.	
Q-7		Attempt all questions	(14)
	a)	Explain the construction and working of a PNP transistor.	(05)
	<b>b</b> )	Explain briefly the Common emitter configuration.	(09)
		Also establish the relation between $\alpha$ and $\beta$ .	
Q-8		Attempt all questions	(14)
-	a)	Give the difference between continuous and line spectra.	(05)
	b)	Explain the simple cube, body centered cube and face centered cubic structure with the help of proper diagrams.	(09)

