Kurdistan Regional Government Iraq Ministry of Higher Education & Scientific Research Salahaddin University –Erbil

College of Basic Education

Department : General Science



Module: solid state phys

Stage: fourth Round:

Time: 75 min

Exams 2021-2022

Q1 –A - Compare between cubic and orthorh B- Explain Bhor's first postulate	nombic crystal structure	e. (6+6) M arks
<ul> <li>Q2: Choose the correct answer</li> <li>1- In tetragonal crystal structure a, b, c l (A- 144 B- 150)</li> <li>2- If the volume of cubic crystal structure is (A- 25 B-10)</li> <li>3- In body centered cubic is lattice parame (A- 3 B-√3.)</li> <li>4- Crystal with lattice points at the corner (A- body centered cubic B- face centered cubi</li></ul>	C- 96) ( $nm$ s 125 ( $nm$ ) <sup>3</sup> lattice pareter is $4\sqrt{3}$ $nm$ radius as and lattice points at	$(n)^3$ ). rameter is $(C-5)$ $nm$ . s of crystal is $(C-4)$ .
Q3 – A- The radius of electron in a fixed el		,
	ocity of electron in its o	
Q4:		14 Marks
<ol> <li>If all atoms are of the same kind respectively.</li> <li>Splitting of energy levels of isolated</li> <li>- If orbital quantum number is 3 the s</li> <li>Long and short order crystal structure</li> </ol>	atoms into in subshell is called a	and number of electron are
Best wishes		
Instructor: Dr Abbas H Ro	ostam	
Signature		
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Kurdistan Regional Government Iraq

**Ministry of Higher Education & Scientific Research** 

University –Erbil

Education

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Module: solid state phys Stage: fourth Salahaddin College of Basic

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Exams 4-12- 2021-

Q1 - Note from B and C answer only one					
a - Compare between cubic and orthorhombic crystal structure.  B- Explain Bhor's first postulate  C-Compare between Primitive and none Primitive unit cell	nrks				
Q2: Choose the correct answer	8 Marks				
1- In tetragonal crystal structure a, b, c lattice parameters are (4, (A-144 B-150 C-96) (nm) <sup>3</sup> )	- · · · · · · · · · · · · · · · · · · ·				
2- If the volume of cubic crystal structure is $125 (nm)^3$ lattice particles					
	) <b>nm</b> .				
3- In body centered cubic is lattice parameter is $4\sqrt{3}$ nm radiu					
$(A-3)   B-\sqrt{3}.$	C - 4).				
4- Crystal with lattice points at the corners and lattice points at ce					
cell (A- body centered cubic B- face centered cubic 5- Types of Bravias lattice are (A-7 B- 14	C-dase centered cubic).				
5- Types of Bravias lattice are (A-7 B-14	C- <del>4</del> ).				
Q3 – A- The radius of electron in a fixed element 3.816 $A^0$ with atomic number 5					
Calculate 1- energy of electron 2-velocity of electron in its orbits	3- frequency of electron				
B -Describe region four or region (D) in semiconductor	(8+8) Marks				
Q4:	14 Marks				
1- If all atoms are of the same kind or different kind crystals a respectively.	re called and				
2- Splitting of energy levels of isolated atoms into in					
3 If orbital quantum number is 3 the subshell is called and	number of electron are				
4- Long and short order crystal structure are called and	respectively				
Best wishes					
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