Menofia University
Faculty of Engineering
Shebien El-kom
Basic Engineering Sci. Department.
Academic Year: 2017-2018
Date: 30 / 05 / 2018

Minoufia University

Subject: electrical properties
and solar cell materials
Code: BES 525
Time Allowed: 3 hours
Total Marks: 100 Marks

Answer all the following questions: [100 Marks]

Q.1

(A) Describe three different of recombination, radiative recombination, auger recombination and recombination via defect level with derive life time in each case of recombination? **[25]**

(B) state with explanation the conduction mechanism in semiconductor?

Q.2 **[25]**

(A) write short notes about density of states for electron & holes?

(B) Explain with draw the effect of temperature on fermi-dirac distribution?

Q.3 **[25]**

(A) Prove that the total conductivity of semiconductors depends on the number and the mobility of both charge carrier?

(B) Explain the absorption in direct and in indirect semiconductors?

Q.4

(A) Describe the crystalline and the energy band diagram for semiconductor? **[25]**

(B) Write short note about diffusion current?

This exam measures the following ILOs							
Question Number	Q1-b	Q3-a	Q3-b	Q4-a	Q2-a	Q2-b	Q1-a
					Q4-b		
	Knowledge &understanding skills				Intellectual Skills		Professional Skills

Good Luck

Dr. Ragan A Elsad