



End Semester Examination – Nov/Dec – 2016

Code : 14NT3021
Sub. Name : Semiconductor Nanostructure & Nanoparticles

Semester : 2016-17 ODD
Duration : 3hrs
Max. marks : 100

ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)

Q. No.	Sub Div.	Questions	Course Outcome	Marks
1.	a.	Discuss various classes of materials and its importance in detail based on semiconductor applications	CO1	10
	b.	Draw the hierarchy of electrical behavior of the material and its applications in detail?	CO1	10
(OR)				
2.	a.	What is mean by defects in nanostructures? Draw various representations of defects and explain its importance in detail	CO1	10
	b.	Define absorption? Explain the various absorption process with neat diagram.	CO1	10
3.	a.	Define synthesis?	CO2	2
	b.	Describe the synthesis method of Solgel in nano materials and discuss its functions in detail.	CO2	18
(OR)				
4.	a.	Write the advantages of CVD method over other synthesis methods? Explain CVD method in detail with neat sketch?	CO2	12
	b.	How synthesis of nano particle is performed using electrodeposition method?	CO2	8
5.	a.	Write down the various steps involved in bottom up process of nanomaterials and explain its process in detail.	CO2	20
(OR)				
6.	a.	Explain in detail about thermal transport of nano-materials for electronic cooling applications?	CO3	20
7.	a.	What is the significance of Melting point in nonmaterial? Discuss various material properties based on Density and tensile strength?	CO3	20
(OR)				
8.	a.	Define photovoltaic effect?	CO3	4
	b.	Write the significance of design parameters involved in PV solar cell and explain solar cell in detail?	CO3	16
<u>Compulsory:</u>				
9.	a.	List the applications of nanowires?	CO3	4
	b.	Design a multiple wall CNT based field effect transistor based on high frequency applications?	CO3	16

Course outcome:

CO1: Students will get an in-depth knowledge about the basics of semiconductor physics.

CO2: Students will get an in-depth knowledge about the basics of semiconductor nanoparticles, semiconductor nanowires.

CO3: Gain knowledge in the applications of semiconductor nanowires.

ALL THE BEST