

Menofia University
 Faculty of Engineering Shebien El-kom
 Basic Engineering Sci. Department.
 Academic Year : 2016-2017
 Date : 3 / 6 / 2017



Subject : physics of dielectric materials
 Code: BES 607
 Time Allowed : 3 hours
 Year : Master
 Total Marks: 100 Marks

Answer all the following questions: [100 Marks]

Q.1 Write notes on: [25]

- a- Volume resistance of variously shaped insulation protons.
- b- Physical essence of electrical conduction of matter.
- c- Physical essence of polarization of dielectrics.

Q.2 [25]

- 1-Explain with detail, permittivity of mixtures ?
- 2- Draw the relation between the polarization and frequency indicating the types of polarization?

Q3 [25]

- 1-Discuss three mechanism of break down?
- 2-Discuss the effect of temperature on dielectric properties?
- 3- Define nanocomposite and show the effect of nanoparticle fillers" surface area" on nanocomposite characteristics?

Q4 [25]

- 1-Discuss Outline of the multi-core model for polymer nanocomposites proposed by Tanaka ?
- 2- Explain the reduction in permittivity based on free volume when inserted nanoparticles to polymer?

This exam measures the following ILOs								
Question Number	Q1-a	Q1-b	Q1-C	Q3-1	Q3-3	Q2-1	Q4-1	Q4-2
	Q3-2	Q2-2						
Knowledge & understanding skills					Intellectual Skills		Professional Skills	

With our best wishes