Reg No.:		Name:	-
		APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY FOURTH SEMESTER B.TECH DEGREE EXAMINATION(R&S), MAY 2019	
		Course Code: EE206	
		Course Name: MATERIAL SCIENCE (EE)	
Ma	x. M	arks: 100 Duration: 3 I	Hours
1		Answer all questions, each carries 5 marks Define polarization and what are different polarization processes?	(5)
2		Explain the properties of Mica and Ceramics.	(5)
3		List any five characteristics of SF <sub>6</sub> .	(5)
4		Explain Curie Wiess law.	(5)
5		Explain superconductivity and its applications.	(5)
6		What are the materials used for solar cells? Explain.	(5)
7		Write short notes on bio materials.	(5)
8		What is photoelectron spectroscopy? Explain.	(5)
		PART B	
		Answer any two questions, each carries 10 marks	
9	a)	Derive Claussius-mosotti relation.	(5)
	b)	What are compound semiconductors?	(5)
10	a)	Differentiate organic and inorganic insulators.	(4)
	b)	Why $SF_6$ gas is used in circuit breakers?	(3)
	c)	What are the insulating materials used in capacitor materials?	(3)
11	a)	Explain different types of polarizations in dielectrics.	(6)
	b)	What do you mean by insulating materials? Explain its classification based on	(4)
		temperature.	
		PART C Answer any two questions, each carries 10 marks	
12	a)	Explain streamer theory of breakdown in gases.	(6)
	b)	Define suspended particle theory.	(4)
13	a)	Explain properties and applications of iron.	(6)
	b)	Explain the applications of magnetic materials in electrical machines.	(4)
14	a)	How breakdown occur in vacuum insulators? Explain any one mechanism.	(6)

	b)	Explain transformer oil treatment method.	(4)
		PART D Answer any two questions, each carries 10 marks	
15		Explain	
		1. Antireflection coating	
		2. Solar selective coating	(10)
		3. Cold mirror coating	
16	a)	Explain atomic absorption spectroscopy.	(5)
	b)	Explain the different characteristic properties of superconductors.	(5)
17		Explain different types of electron microscopy and their applications.	(10)
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