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SUBJECT CODE NO:- E-356
FACULTY OF ENGINEERING AND TECHNOLOGY
S.E.(EE/EEE/EEP)(CGPA) Examination Nov/Dec 2017
Elective - I: Electrical Engineering Materials
(REVISED)

[Time: Three Hours]

[Max.Marks:80]

Please check whether you have got the right question paper.

N.B Q. No.1 and 6 are compulsory. Solve any two from remaining from each section.

Section A

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|-----|----------------------------------------------------------------------------------------------------------|----|
| Q.1 | Solve any five of following | 10 |
| | a) State Properties of good Insulating material. | |
| | b) List optical properties of material used for power generation. | |
| | c) Define dielectric constant and dipole moment. | |
| | d) Define polarization. | |
| | e) Classify magnetic material. | |
| | f) State various factors affecting on Breakdown voltage. | |
| Q.2 | a) Explain construction, equivalent circuit, and application of photovoltaic cell with neat diagram. | 08 |
| | b) Explain the properties of fibers Insulating materials also state its application. | 07 |
| Q.3 | a) State the properties of magnetic material. And differentiate between soft and hard magnetic material. | 07 |
| | b) What are ferrites? Enlist some ferrites with their applications. | 08 |
| Q.4 | a) Explain the Insulating material used for rotating machines. | 07 |
| | b) Explain Electronic, Ionic and oriental polarization. | 08 |
| Q.5 | Write short notes on (any three) | 15 |
| | i) Transformer oil | |
| | ii) Ferro- electricity | |
| | iii) Primary Ionization in gases | |
| | iv) Magnetic recording material | |

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Section – B

- Q.6 Solve any five 10
- a) State properties of thermal conduction material.
 - b) List out properties of material used for transmission line conductor.
 - c) What is superconductivity?
 - d) State properties of Nano- tubes.
 - e) What is soldering material?
 - f) For what purpose IS6798 is used.
- Q.7 a) Discuss working of thermal Bimetal and thermocouple. 08
b) Explain properties of copper and its alloys. 07
- Q.8 a) Explain various conducting mechanism in Nano- structures. 08
b) Explain BN Nanotubes in detail. 07
- Q.9 a) How to measure KVAR capacity of Power capacitor as per IS 2834 of 1986. 08
b) Explain measurement of flux density by Gauss- meter. 07
- Q.10 Write a short note on (any three) 15
- a) Nichrome and Eureka
 - b) Concept of Energy bands
 - c) Application of Nano- material
 - d) Single electron transistor