

SUBJECT CODE NO:- P-147
FACULTY OF ENGINEERING AND TECHNOLOGY
S.E. (EEP/EE) Examination May/June 2017
Electrical Engineering Materials
(Revised)

[Time:ThreeHours]

[Max.Marks:80]

Please check whether you have got the right question paper.

- N.B
- 1) Q1 and Q6 are compulsory
 - 2) Solve any two questions from the remaining from each sections

Section A

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| Q.1 | Solve any five | 10 |
| | a) Define | |
| | i) Magnetization | |
| | ii) Magnetic dipole | |
| | b) State the factors affecting breakdown strength | |
| | c) State the effect of photo-conduction. | |
| | d) What is pyro-electricity | |
| | e) What is dielectric loss? | |
| | f) What is polarization? | |
| Q.2 | a) What is polarizability? Explain electronic and orientation polarization | 08 |
| | b) Explain the properties and applications of ceramics | 07 |
| Q.3 | a) Explain the insulating materials used for rotating machines | 07 |
| | b) Explain the materials used for power capacitors and power cables | 08 |
| Q.4 | a) Explain the magnate materials used in | 08 |
| | i) Power transformer | |
| | ii) Memory disc | |
| | b) State the different breakdown mechanism. Explain any one of them. | 07 |
| Q.5 | Write notes on (any three) | 15 |
| | a) SF6 | |
| | b) Transformer oil | |
| | c) Insulating resins | |
| | d) Ferro electricity | |

Section B

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|-----|---|----|
| Q.6 | Solve any five | 10 |
| | a) Differentiate in between low and high resistive materials. | |
| | b) State the applications of Nano-wires. | |
| | c) State the general properties of good conductor | |
| | d) What is thermocouple? | |
| | e) What is alloying? | |
| | f) State the electric properties of Nano-tubes | |
| Q.7 | a) Explain the various conducting mechanism in Nano-structures. | 08 |
| | b) Explain the risk factors involved in Nano-technology | 07 |

- Q.8 a) Explain the materials used for transmission lines. 07
b) Explain the different alloys for different types of fuses 08
- Q.9 a) How will you measure resistivity of resistive materials in your lab? 08
b) Explain the testing of high voltage cables 07
- Q.10 Write a notes on (any three) 15
a) Molecular machines
b) Soldering materials
c) Superconductivity
d) Concept of energy bands