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SUBJECT CODE NO: H-435
FACULTY OF SCIENCE AND TECHNOLOGY
S.E. (EE/EEE/EEP)
Elective – I: Electrical Engineering Materials
(REVISED)

[Time: Three Hours]

[Max.Marks: 80]

Please check whether you have got the right question paper.

- N.B
- i) Q.No.1 and Q.No.6 are compulsory.
 - ii) Solve any two form the remaining form each section

Section A

- Q.1 Solve any five 10
- a) Define “ionic polarization”
 - b) State working principle of PV cell
 - c) Define dielectric Breakdown strength
 - d) Define anti ferro-magnetism
 - e) List various magnetic Recording material
 - f) Define loss tangent and its significance
 - g) Define dipole moment
- Q.2 08
- a) Explain photo conductive and photo emissive cell with diagram
 - b) What is polarizability? Explain electronic and orientation polarization 07
- Q.3 07
- a) Explain the properties of resins. Differentiate between natural and synthetic resins
 - b) Explain the properties and application of ceramic and Mica. 08
- Q.4 08
- a) Give classification of magnetic material in details with properties and application of each
 - b) Explain the selection criteria of magnetic material for transformer and rotating machines 07
- Q.5 Write short notes on (any three) 15
- a) SF₆ gas
 - b) Primary ionization
 - c) Asbestos and varnish
 - d) Compact discs

Section B

- Q.6 Attempt any five 10
- a) State properties of aluminium.
 - b) Differentiate between high and low resistive materials
 - c) State properties of conducting materials
 - d) Write any four properties of fuse element material?
 - e) State “Hall effect” related to gauss meter
 - f) What is type test carried out on capacitor?

- Q.7 a) Explain the risk involved in Nano-technology 07
 b) Explain concept of energy band in detail 08
- Q.8 a) Explain measurement of tangent of dielectric loss angle by Schering bridge 08
 b) Explain with neat diagram the method of testing of high voltage bushings in details 07
- Q.9 a) Explain the application and properties of silver and its alloys 08
 b) Explain various materials used for lamp filament. 07
- Q.10 Write a notes on (any three) 15
 a) Carbon Nano tubes
 b) Canthal and Tungsten
 c) Molecular machines
 d) Measurement of flux density by Gauss meter