SUBJECT CODE :- 508
FACULTY OF ENGINEERING AND TECHNOLOGY
S.E. (EEP/EE) Examination Jan 2016
Electrical Engineering Materials
(Revised)

[Time: Three Hours] **[Max. Marks: 80]**

"Please check whether you have got the right question paper."

N.B i) Q.1 & Q.6 are compulsory.
ii) Attempt any two questions from remaining of each section.
iii) Use separate answer book for each section.

Section A

Q.1 Solve any five. 10
a) Define 'piezoelectric effect'.
b) Define
i) Magnetization
ii) Magnetic susceptibility.
c) State the properties of good insulating material.
d) Explain the process of photoemission.
e) Define
i) Breakdown voltage
ii) Breakdown strength.
f) Explain the process of impregnation

Q.2 a) What is dielectric polarization? Explain electronic polarization and ionic polarization. 08
b) Differentiate in between piezoelectricity and ferroelectricity. 07

Q.3 a) Explain the properties and applications of fibrous insulating materials. 07
b) State the properties of resins. Differentiate. In between natural and synthetic resins. 08

Q.4 a) What are ferrites? Name some ferrites and give their applications. 07
b) State the properties of magnetic material. Differentiate between soft and hard magnetic material. 08

Q.5 Writes note on(any three) 15
a) Sf_6
b) Mechanism of break down.
c) PV cells
d) Materials used for the insulations.

Section B

Q.6 Solve any five. 10
a) State the features of copper alloys.
b) State the working principle of thermocouple.
c) What are carbons Nano-tubes?
d) State 'Hall effect' related to Gauss meter.
e) Why is carbon preferred for brushes in electric machines?
f) What is routine test carried out carbon out on capacitor.

Q.7 a) With neat diagram describe carbon capacitor tubes and Nano- wires. 08
b) Explain the application of nano—materials. 07

Q.8 a) What is thermal bimetal? Name some thermal bimetals and their applications. 08
b) What are the properties of Aluminiumand copper where are these materials used? 07

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Q.9 a) Explain the measurement of loss tangent by shearing bridge method. 08

b) Explain the measurement of flux density by Gauss- meter. 07

Q.10 Write notes on (any three) 15

a) Nichrome& Eureka

b) BN nano-tubes

c) Brass & bronze

d) Single electron transistor.

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