Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

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EE/EX-5005(2)-CBGS

B.E. V Semester

Examination, June 2020

Choice Based Grading System (CBGS)

Electrical and Electronic Materials

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Discuss the relative merits and demerits of aluminium used as electric conductor instead of copper.

   b) What are the important characteristics and requirement of the various groups of resistor material based on their practical application.

2. a) Write in short about the material used in the following.

   i) Conductor material for over head lines.

   ii) Conductor material used in electrical machines.

   b) What material is used for the element of electrical heaters. What are the properties the material must possess for this uses.

3. a) What is dielectric strength of material and discuss factors affecting it.

   b) What is Piezoelectricity? Explain the effect of piezoelectricity.

4. a) What are the factors that effect the insulation of transformer oil?

   b) Explain the electrical, mechanical and thermal properties of insulating materials.

5. a) What do you mean by intrinsic and extrinsic semiconductor materials and also discuss the application of semiconducting materials?

   b) What is the Hall effect and derive the expression for Hall voltage and Hall angle?

6. a) Explain the terms diamagnetic, paramagnetic and ferromagnetic with reference to magnetic dipoles of atoms.

   b) Describe soft magnetic and hard magnetic materials using B-H curve and give their applications.

7. a) State the properties of SF_6 gas and its applications.

   b) What is super conductivity and discuss its applications?

8. Explain the following (any two)

   a) Ultra light material

   b) Materials of MHO generator

   c) LCD and LED's

   d) Materials for bus bar

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