Total No. of Questions :5] *[Total No. of Printed Pages :2*

Roll No .....

EX-402

B.E. IV Semester

Examination, December 2016

Electrical and Electronics Material

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.
ii) All parts of each question are to be attempted at one place.
iii) All questions carry equal marks, out of which part A and B (Max. 50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max. 400 words) carry 7 marks.
iv) Except numericals, Derivation, Design and Drawing etc.

Unit - I

1. a) What is seeding process in MHD generator and the material used for it?
   b) If you have to select a material and the primary requirement is a high melting temperature. What material would you suggest and why?
   c) Why is copper preferred for winding of electrical machine as compared to aluminium?
   d) Discuss the types of resistors and their applications.

OR

Write in short about the material used in the following.
i) Fuel cells ii) Underground cables

Unit - II

2. a) Write the factors on which the breakdown voltage of dielectric material depends.
   b) Discuss the affect of moisture on insulation.
   c) Explain the term 'dielectric constant' and 'dielectric strength'.

   d) Explain the electrical, thermal and mechanical properties of insulating material.

OR

Give a brief comparison of various types of capacitors according to the dielectric material used in them.

Unit - III

3. a) What is LDR and what are its applications?
   b) Give the names of some piezoelectric material and their applications.
   c) State a few applications of thermistors.
   d) Discuss the applications of semiconductors to obtain non-linear resistors and temperature sensitive resistors.

OR

Explain semiconductor laser, its characteristics and applications.

Unit - IV

4. a) Write the practical applications of thermocouples.
   b) Define Magnetostriction.
   c) State the properties required by the material for transformer core.
   d) What are Ferrites? Give their properties and applications.

OR

Explain galvanising and impregnation process and give their applications.

Unit - V

5. a) Why Monolithic integrated circuits are so named?
   b) What is the importance of IC?
   c) Different materials used in IC fabrications.
   d) How components are interconnected in IC?

OR

Explain various processes in the manufacturing of integrated circuits.

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