

III/SEM/ELECT/2015 (W)

ELECTRICAL ENGINEERING MATERIAL

Sub Code-EET 302

Full Marks : 70

Time : 3 hours

Answer any five questions

The figures in the right-hand margin indicate marks

- 1. (a) What is bundle conductors? 2
- (b) Write the use of fuse. What are the desirable properties of fuse material? 5
- (c) With the help of energy diagram distinguish between conductors, semiconductors and insulators. 7
- 2. (a) What is Hall effect? 2
- (b) Briefly describe about polarisation. 5
- (c) Distinguish between paramagnetic, diamagnetic and ferromagnetic material. 7
- 3. (a) What is permittivity? 2

(Turn Over)

- (b) What is eddy current loss and hysteresis loss? On what factors do the losses depend? 5
- (c) Explain the principle of the thermocouple and write about different types of thermocouple. 7
- 4. (a) What is magnetostriction? 2
- (b) State the application of enamelling. Mention a few enamels with their properties. 5
- (c) Mention the factors which effect the dielectric loss of insulating material. Explain with the phasor diagram (i) dielectric loss and (ii) loss angle. http://www.sctevtonline.com 7
- 5. (a) What is bimetal? 2
- (b) What is the concept of majority and minority charge carriers? 5
- (c) Discuss the various electrical properties of insulating material. 7
- 6. (a) Differentiate between volume resistance and surface resistance. 2
- (b) Write briefly on soft and hard magnetic material. 5

(3)

- (c) What is superconducting materials ? Write its application. 7
7. (a) What is breakdown voltage ? 2
- (b) State the advantages and disadvantages of aluminium as compared to copper when used as conductor of electricity. 5
- (c) Briefly write about photoconductive cell and photovoltaic cell. 7
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