Roll No. | | | | | | | | | | | | |

Total No. of Pages : 01

Total No. of Questions : 08

M.Tech.(EPDT) (2016 & Onwards) (Sem.–1)

ELECTRONIC PRODUCT DESIGN

Subject Code : MTET-103

Paper ID : [74137]

Time : 3 Hrs. Max. Marks : 100

INSTRUCTION TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

1. a. Explain Bathtub curve for reliability indicating all its regions. Also explain how failure rates can be reduced in different regions of bathtub curve. (8)
   b. Explain the terms MTBF and MTTF. (6)
   c. Classify electronics products and specify approximate cost, performance ratio, reliability and temp range for each category. (6)
2. a. Explain Function analysis system techniques (FAST) in details. (10)
   b. Discuss the role of ergonomics in design and development of new products. (10)
3. a. What are the various factors affecting the design of heat sink and its cooling effectiveness. (10)
   b. Draw and explain the thermal- electrical analogy of power transistor. (10)
4. a. Explain the primary and secondary functions of the product. Discuss with illustrations. (10)
   b. Discuss the types of controls and organisation of control panel. (10)
5. a. What are the different modes of heat transfer that can occur in an electronic product? (10)
   b. Explain the concept and procedure of fault tree analysis. (10)
6. a. What are the techniques of surface modeling? Explain in detail. (10)
   b. Explain the thermal design consideration at component and board level. (10)
7. a. Explain the different packaging schemes followed in electronic product design. (10)
   b. Explain the different types of interconnections. (10)
8. a. Explain the series, parallel and mixed configuration of system reliability concept. (10)
   b. Explain rendering and shading methods. (10)