

Total No. of Questions : 8]

SEAT No. :

PE-2242

[Total No. of Pages : 2

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B.E. (Electronics & Telecommunication Engineering)

ELECTRONICS PRODUCT DEVELOPMENT

(2019 Pattern) (Semester - VII) (404185 B) (Elective - IV)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates :

- 1) *Attempt Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Assume suitable data, if necessary.*

Q1) a) Explain methods of product debugging. **[8]**

b) Explain in detail mechanism for cooling for an electronic product. **[10]**

OR

Q2) a) Describe documentation preparation for product. **[8]**

b) Write a note on: **[10]**

- i) User interface
- ii) Embedded and real-time software.

Q3) a) Explain the waterfall model of software development. **[7]**

b) State the salient features of **[10]**

- i) Algorithm
- ii) Flowchart
- iii) Pseudo code

OR

Q4) a) Discuss any One with the help of a neat diagram /schematic. **[7]**

- i) Structured programming
- ii) Coupling and cohesion

b) Explain the spiral model of software development. **[10]**

P.T.O.

- Q5) a)** Discuss the development plan for risk abatement in software development. [8]
b) What is real-time software? Explain its significance in product design with examples. [10]

OR

- Q6) a)** Define / Explain the following terms associated with PCB design. [10]
i) Containment
ii) Electromagnetic interference (EMI)
iii) Electromagnetic compatibility (EMC)
iv) Immunity
v) Susceptibility
vi) Suppression
vii) Electrostatic discharge (ESD)
viii) Transmission mode of RF energy
b) Explain fan and forced cooling. [8]

- Q7) a)** What is testing and debugging? Explain the steps in debugging. [6]
b) Discuss tips for troubleshooting analog circuits and digital circuits. Also discuss the checklist for powering circuits during troubleshooting and debugging. [6]
c) With respect to the debugging process, explain the different types of characterization of components. [5]

OR

- Q8) a)** What are electromechanical components? Explain any two electromechanical components. [6]
b) Define documentation. What are the different types of documents to be prepared by the product manufacturer? [6]
c) Discuss the visual techniques of documentation with suitable examples. [5]

