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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)**B.Tech IV Year I Semester Supplementary Examinations July-2022****EMBEDDED SYSTEMS**

(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)**UNIT-I**

- 1 a With a neat diagram, explain the design process of an embedded system. 12M

OR

- 2 a Differentiate SRAM & DRAM. 4M
b Explain the various purposes of embedded systems in detail with examples. 8M

UNIT-II

- 3 a List the types of memories used for program storage in an embedded system design. 2M
b Briefly explain about memory architectures in embedded systems. 10M

OR

- 4 Explain the role of following in embedded system 12M
i) Oscillator ii) Brownout Protection iii) Embedded Firmware

UNIT-III

- 5 a Justify, why hardware timer is needed instead of software timer. 2M
b List out the features of ATmega328/P μ C. 10M

OR

- 6 a Define Interrupt. 2M
b Explain about internal and external interrupts of ATmega328/P μ C 10M

UNIT-IV

- 7 a List various data types present in Arduino programming and explain them with the help of snippets. 8M
b Explain about various Constants in Arduino programming. 4M

OR

- 8 a Explain about the Arduino programming control structures with an example. 8M
b Explain about the comparison operators with an example. 4M

UNIT-V

- 9 a Define IoT. 2M
b List the applications of IoT 10M

OR

- 10 a Write a short note on smart farming. 2M
b Design and explain a IoT based solution that can be implemented in farming for better yield of crops and maintenance of livestock. 10M

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