

Duration: 3 Hours

[Marks:80]

- N.B. :** (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required, and state it clearly.

- 1 Attempt any FOUR [20]
- a Compare Harvard and Von Neumann architecture.
 - b Explain cache memory.
 - c Compare microprocessor and microcontroller.
 - d List the features of ARM7.
 - e List the features of ATMEGA 328P.
- 2 a Explain addressing modes of 8051 with one example each. [10]
- b Differentiate between: i) Static and Dynamic RAM. ii) Paging and segmentation. [10]
- 3 a Explain with diagram Interfacing of electric kettle operating on 230V/ 5A to 8051 microcontroller. Write a program to make it ON and OFF depending on the status of bit, with an address 09H. [10]
- b Explain exceptions handling in ARM7 with reference to exception entry, return and exception priorities. [10]
- 4 a Explain serial communication in 8051 with the help of SCON register. [10]
- b Explain the concepts of program counter, stack and stack pointer. [10]
- 5 a What are the factors to consider while selecting microcontroller for a given application. [10]
- b Explain in detail with diagrams ports of microcontroller 8051. [10]
- 6 a Write an 8051 program to convert hexadecimal number stored in location 20H to unpacked decimal. Store the result at 21H, 22H and 23H. [10]
- b Explain ARMs programmers' model with neat diagram. [10]
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