



(Pages : 2)

1332

Reg. No. :

Name :

Fourth Semester B.Tech. Degree Examination, April/May 2012
(2008 Scheme)
Branch : Information Technology
08.403 : MICROCONTROLLER BASED DESIGN (F)

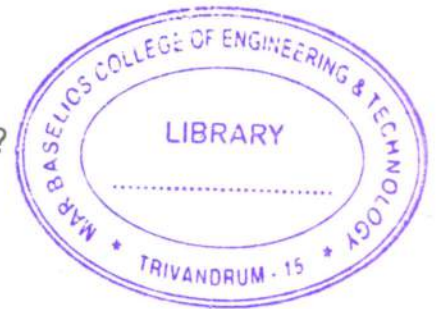
Time: 3 Hours

Max. Marks: 100

PART – A

Answer **all** questions. **Each** question carries **4** marks.

1. Compare different controllers in 8051 family.
2. Explain SCON register of 8051.
3. Explain the dual role of part 2 in 8051.
4. Discuss the pins - \overline{EA}/VPP and \overline{PSEN} of 8051.
5. Which are the important handshaking signals in RS 232 ?
6. What is the importance of TI and RI flags of 8051 ?
7. How can we change the default priority of interrupts in 8051 ?
8. Distinguish between SJMP and LJMP instructions.
9. Explain how, a DAC can be interfaced to 8051.
10. Compare the advantages of programming in high level and assembly language in an embedded system.



P.T.O.



PART – B

Answer **any one** question from **each** Module. **Each** question carries **20** marks.

Module – 1

11. a) Draw programming model of 8051 and explain. 15
b) Draw port O pin configuration of 8051. 5

OR

12. a) Discuss various special function registers in 8051. 10
b) Write an assembly language program to add 5, 8 bit numbers in consecutive internal memory locations. 10

Module – 2

13. a) Explain in detail Mode 1 and Mode 2 programming of times. 15
b) Assuming that clock pulses are fed to a pin, write a program for counter 1 in mode 2 to count the pulse and display the state of TL1 count on P2. 5

OR

14. a) Explain the steps to be taken in programming 8051 to transfer data serially. 10
b) Explain level triggered and edge triggered interrupts. 5
c) Explain TCON registers in 8051. 5

Module – 3

15. a) Explain how an LCD display is interfaced to 8051. 5
b) With schematic and timing diagrams explain the interfacing of a standard 8 bit ADC to 8051. 15

OR

16. a) Draw the block schematic of connecting 8K × 8 Data ROM to 8051 and explain. 15
b) Write notes on ARM processors. 5
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08.406 : DATA BASE DESIGN (F)

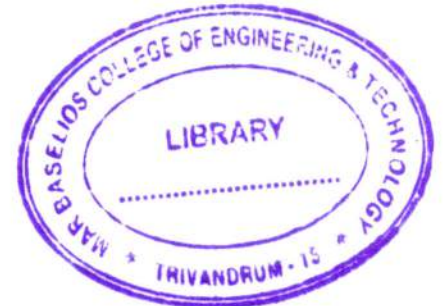
Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions :

1. Define the terms : i) foreign key ii) Super key.
2. Explain division operation with the help of example.
3. What are the functions of database administrator ?
4. Define : derived attribute, composite attribute and multivalued attribute with examples.
5. What is meant by trigger ?
6. Explain 2NF, with example.
7. Define join dependency.
8. Explain two phase locking protocol.
9. Discuss different types of failures.
10. Explain the use of currency pointers.



(10×4=40 Marks)

PART – B
Module – I

11. a) What are the advantages of DBMS over file processing system. 10
- b) Construct an E-R diagram for a car-insurance company that has a set of customers, each of whom owns one or more cars. Each car has associated with it zero or more recorded accidents. 10

OR

P.T.O.



12. a) Draw an E-R diagram for Hospital management system by assuming the necessary entities and relationships. 10

b) Given relation schema R, with attributes A, B, C, and D as follows :

$R = (A, B, C, D)$

Let r be a relation of schema R. Express the following relational algebra statement in tuple relational calculus and domain relational calculus :

$\pi_{A,C}(\sigma_{B="xyz"}(r))$.

10

Module – II

13. a) Consider the following relations for a database that keeps track of business trips of salespersons in a sales office :

Salesperson (SSN, Name, Start-date, dept-no)

Trip (SSN, from-city, to-city, dep-date, ret-date, trip-id)

Expenses (trip-id, Acc no, Amount)

Specify the following queries in SQL :

- i) Create all the tables with necessary constraints.
- ii) Give the details for trips that exceed Rs. 2000 in expenses.
- iii) Print the SSN of sales man who took trip to "Moonar".
- iv) Print the trip expenses incurred by the salesman with SSN=234. 10

b) Explain multivalued dependency and 4 NF with examples. 10

OR



- 14. a) Explain the drawbacks of relational database design. Explain the desirable properties of decomposition. 10
- b) Define normalization. Explain BCNF and 3NF, with examples. 10

Module – III

- 15. a) Explain conflict serializability and view serializability. 10
- b) Explain B+ tree structure. 10

OR

- 16. a) Explain dense, sparse and multilevel indices. 10
- b) Explain immediate database modification technique. 10

