

Code No: 5155B

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M.Tech I Semester Examinations, August - 2014

**EMBEDDED C**  
(Embedded Systems)

Time: 3 Hours

Max. Marks: 60

**Note:** This question paper contains two parts A and B.  
Part A is compulsory which carries 20 marks. Answer all questions in Part A.  
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 8 marks and may have a, b, c as sub questions.

**PART - A**

5 × 4 marks = 20

- 1.a) Explain the link between oscillator frequency and machine-cycle period.
- b) What is the need for pull-up resistors to connect switch to I/O ports?
- c) According to generations, what are the classifications of programming language.
- d) What is the importance of "timeout" mechanism?
- e) What is disarmed state?

**PART - B**

5 × 8 marks = 40

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2. Explain the serial communications control operation in 8051 in different modes of operation.

**OR**

3. Explain the timer/counter operation in 8051 in different modes.

4. Write a program to count the number of visitors entering a museum.

**OR**

5. How we controlled, read-from or write-to individual port pins without altering the values of other pins on the same port?

6. How C/C++ useful in embedded system programming? Also mention its advantages.

**OR**

7. What is "Project Header"? Explain its necessity.

8. Write a program to flash a LED with 50ms delay.

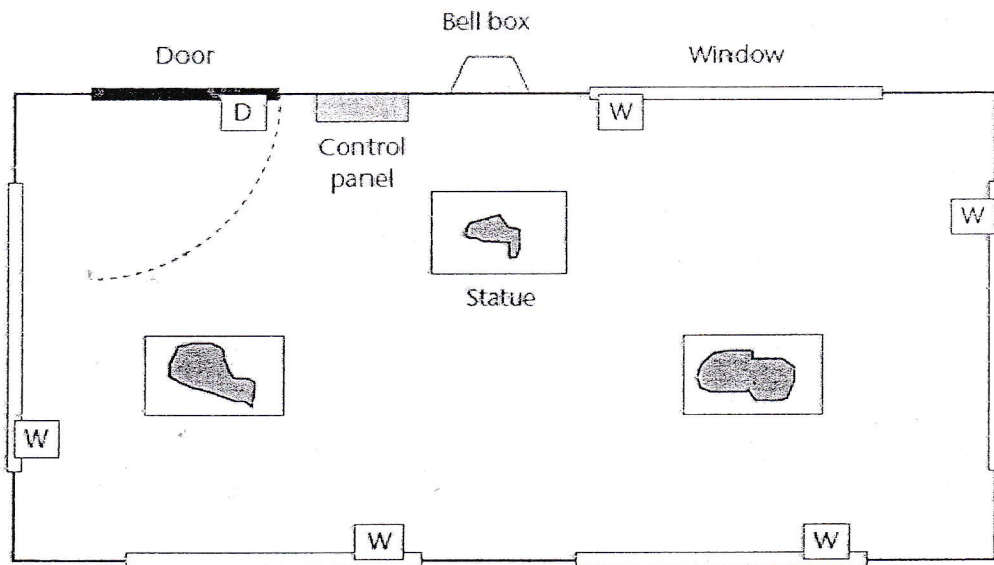
**OR**

9. Describe the various stages involved in the design of Aircraft Autopilot System.

10. Explain the complete design of embedded system with an example.

**OR**

11. Explain the steps involved to design of an intruder alarm system suitable for an art gallery shown in below figure.



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