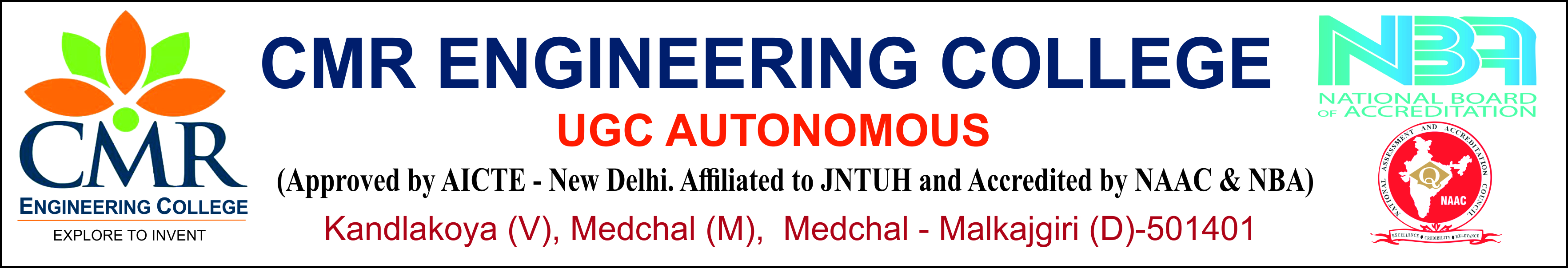
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**IV.B.TECH-I-SEM-I MID EXAMINATIONS Date: Time: 10:00 AM TO 11:30 AM**

**Subject: INTRODUCTION TO EMBEDDED SYSTEMS Branch: IT,CSM Marks: 25 M**

***Note: Question paper contains two parts, Part - A and Part - B.***

***Part-A is compulsory which carries 10 marks. Answer all questions in part-A.***

***Part-B consists of (21/2) units. Answer any one full question from each unit. Each question carries 5 marks and may have a, b, c sub questions.***

**PART A 5 x2=10**

1. Define Embedded system and mention its major applications areas. (CO1) [BTL1]
2. List out the characteristics of an embedded system. (CO1) [BTL2]
3. What is memory shadowing? What is its advantage? (CO2) [BTL2]
4. What is the role of DSP in an embedded system design? (CO2) [BTL1]
5. What is an embedded firmware? (CO3) [BTL1]

**PART B 3 x5=15**

1. Explain the about the purpose of embedded systems in detail. (CO1) [BTL2]

**(OR)**

7. What are the Operational Quality attributes of embedded systems? (CO1) [BTL2]

1. Define Memory and various types of memories used in embedded systems? (CO2) [BTL2]

**(OR)**

1. With the help of diagram discuss about I2C and SPI in detail. (CO2) [BTL2]

1. Explain about Reset circuit and Brown-out protection circuit. (CO3) [BTL2]

**(OR)**

11. Describe the purpose of a Real Time Clock in an embedded system. (CO3) [BTL2]

**SCHEME OF EVALUATION**

**Part –A**

| **SNO** | **THEORY** | **MARKS** | **TOTAL** |
| --- | --- | --- | --- |
| **1** | Define Embedded system and mention its major applications areas. | **2** | **2** |
| **2** | List out the characteristics of an embedded system. | **2** | **2** |
| **3** | What is memory shadowing?  What is its advantage? | **1**  **1** | **2** |
| **4** | What is the role of DSP in an embedded system design? | **2** | **2** |
| **5** | What is an embedded firmware? | **2** | **2** |

**Part –B**

| **SNO** | **THEORY** | **MARKS** | **TOTAL** |
| --- | --- | --- | --- |
| **6** | Explain the about the purpose of embedded systems in detail. | **5** | **5** |
| **7** | What are the Operational Quality attributes of embedded systems? | **5** | **5** |
| **8** | Define Memory and  various types of memories used in embedded systems? | **2**  **3** | **5** |
| **9** | With the help of diagram discuss about I2C and SPI in detail. | **2**  **3** | **5** |
| **10** | Explain about Reset circuit and Brown-out protection circuit. | **5** | **5** |
| **11** | Describe the purpose of a Real Time Clock in an embedded system. | **2**  **3** | **5** |