MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

(Affiliated to JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD)

Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

III B.TECH II SEMESTER SUPPLEMENTARY EXAMINATIONS, DECEMBER -2018

Subject: Embedded Systems

Branch: IT

Time: 3 hours   **Max. Marks: 75**

Answer any **FIVE** Questions of the following   **5x15M=75M**

1 a) Discuss the challenges in embedded computing system design explain?   7M

   b) What is Actuator? Explain its role in Embedded System Design? Illustrate with an example.   8M

2 a) Discuss the format of PSW register of 8051 and explain each bit.   7M

   b) What is operational quality attribute? Explain the important operational quality attributes to be considered in any embedded system design?   8M

3 a) Write about serial communication devices and timer counter devices?   7M

   b) Explain the basic building blocks of PCB layout design?   8M

4 a) Explain detail about Memory allocation related functions   5M

   b) Explain Queue related functions?   5M

5 a) Explain the various Communication/Synchronization Issues?   7M

   b) Explain about Task Synchronization Techniques?   8M

6 a) Explain remote procedures call with an example?   8M

   b) Explain briefly about Message Passing?   7M

7 a) what is the difference between a General Purpose kernel and a Real-Time kernel? Give an example for both Real-Time Operating System (RTOS)?   8M

   b) Explain an example RTOS like uC-OS (open source)?   7M

8 a) Explain translation tools used in an embedded system?   7M

   b) Discuss the Quality assurance and testing of the embedded system design?   8M