B. TECH. SEM -VI (E & TC ENGG.) (2014 COURSE) (CBCS) :
WINTER - 2017
SUBJECT: EMBEDDED SYSTEMS

Day: Tuesday **Time:** 10.00 AM TO 01.00 PM
Date: 21/11/2017 **W-2017-2246** **Max. Marks: 60**

N.B:

1) All questions are **COMPULSORY.**
2) Figures to the right indicate **FULL** marks.
3) Assume suitable data if necessary.

Q.1 **a)** Define embedded system. What are the different characteristics of an embedded system? **(06)**
b) Compare embedded system Vs General computing systems. **(04)**

OR

Write a note on hardware components of an embedded system. **(10)**

Q.2 **a)** What is priority inversion problem in RTOS? How it can be resolved? **(06)**
b) With reference to RTOS, explain Queues and pipelines. **(04)**

OR

a) Write a note on Tasks and Task Scheduler. **(05)**
b) List different I/O functions in embedded C. **(05)**

Q.3 **a)** Compare ARM7, ARM9 and ARM11 series processors. **(06)**
b) Write the contents of CPSR register in ARM7. **(04)**

OR

a) Draw and explain data flow model of ARM7. **(06)**
b) Write a note on GPIO and registers related in ARM7. **(04)**

Q.4 Draw the interfacing of LCD with LPC2148 and write a program to display string "Make in INDIA" on LCD. **(10)**

OR

a) With neat diagram, describe interfacing of I2C EEPROM with LPC2148. **(05)**
b) Write a program for LPC2148 to switch on buzzer for 1 second and switch off for 4 seconds continuously. **(05)**

Q.5 **a)** Compare Cortex-A, Cortex-R and Cortex-M series processors. **(05)**
b) What are the different power saving modes in LPC1768? **(05)**

OR

a) Write a note on registers associated with GPIO in LPC1768. **(06)**
b) Explain three clock sources (oscillators) in LPC1768. **(04)**

Q.6 Draw the interfacing diagram of LPC1768 with Seven Segment display and explain the Operation. **(10)**

OR

Draw the interfacing of RGB-LED with LPC1768 and write a program to glow red, green and yellow LED alternatively for 2 seconds. **(10)**

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