APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SECOND SEMESTER M. TECH DEGREE EXAMINATION
Electronics & Communication Engineering
(VLSI & Embedded Systems)
04EC6507 Design With ARM Microcontroller

Max. Marks : 60   Duration: 3 Hours

PART A
Answer All Questions
Each question carries 3 marks

1. What is the 4+1 Model in Defining the Architecture
2. What is the need for an H Bridge in a DC Motor Circuit
3. Distinguish between Cross Compiler and Cross Assembler
4. Draw the bit Structure of a Current Program Status Register
5. Write a program to compare two numbers which are in Registers R1 and R2. The bigger number is to be placed in R10. If the two numbers are equal , then the number is to be moved to R9
6. Explain the following Instructions
    (a)RSB R2,R2,#2 (B)SMLAL R0,R1,R2,R3 (C)TEQ R3,R4
7. Draw the bit definition of VIC Interrupt Enable Register.
8. Calculate the value of the value to be given in PWMMR0 and PWMMR3 to get a pulse train of period 5ms and duty Cycle of 25%.

PART B
Each question carries 6 marks

9. Draw the Architectural Business Cycle (ABC) Of Embedded System and Explain the Four Steps involved in it.

OR

10. Draw and Explain the Embedded System Development Cycle Model

11. Distinguish between Static and Dynamic RAM with the help of Diagrams

OR

12. Explain the Principal of data Storage in Flash memory. Differentiate it with NAND flash Structure

13. Explain the IDE Conversion steps from source file to an executable file

OR

14. List the Component of an IDE and derive the role of each component

15. Draw the Register set of ARM and explain the Mode Switching

OR

16. Draw the Functional Block Diagram of ARM920T Core Processor and explain the blocks.

17. Write a Program to calculate $3X^2+5Y^2+9Z^2$, where X=5,Y=3,Z=7

OR

18. Explain the difference between Shift & Rotate instructions and Compare instructions in ARM

19. Write a program to Generate an asymmetrical wave at the lowest four pins of Port0

OR

20. Explain the Timer operation of LPC2148 With the help of Necessary Program