

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SECOND SEMESTER M.TECH DEGREE EXAMINATION, MAY 2016

Electronics & Communication Engineering

(VLSI & Embedded Systems)

04EC 6524 —Embedded Control Systems

Max. Marks : 60

Duration: 3 Hours

PART A

Answer All Questions

Each question carries 3 marks

1. What are the basic modes of Operation in 8255.
2. Differentiate between the Function **DispHorBar()** , **DispDefChar()**
3. Draw the Clock/Calendar flow diagram with semaphore
4. What is (i) **CommCfgPort()** & (ii) **CommRxFlush()**
5. Draw R 2R Ladder Method of Digital to Analog Conversion
6. Write the Port Offset Address for digital to Analog Converter
7. Draw the H Bridge and the Corresponding Configuration Table
8. What is meant by Multiple closure problems

PART B

Each question carries 6 marks

9. Differentiate between the Data Lines and Address lines in a Embedded Control System
OR
10. Draw the Block Diagram of 8255 Programmable Peripheral Interface and explain Operation
11. Draw The Matrix Keyboard Driver flow Diagram and Explain ant three Functions
OR
12. Draw the LED Multiplexing Block Diagram and write the pseudo code for the ISR.
13. What are the timer Manager module interface function. Explain any three Function.
OR
14. What is Interrupt driven Pulse width modulation. Write an ALP for PWM Generation.
15. What are the functions in the low level PC serial I/O Module? Explain any Three
OR
16. Differentiate between the Buffered Serial I/O Receiving Bytes and Transmitting Bytes with the help of Diagrams

17. Derive an analysis for a Resistor Network in R 2R Ladder Method

OR

18. Write a code for Calculating the Port offset Address from the Main Port Address for the Hardware board

19. Explain about Bi Directional Control of Motors and H Bridge

OR

20. What is meant by Power electronic control systems. Give any Example