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Question Paper Code: 54426

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Fourth Semester

Computer Science and Engineering

15UEC426– MICROPROCESSORS AND MICROCONTROLLERS

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. The instruction, MOV AX, 0005H belongs to the _____ address mode CO1- R
(a) register (b) direct (c) register relative (d) immediate
2. The signal that may be used either to interrupt the CPU or polled by the CPU is CO2- R
(a) Transmitter ready (b) Receiver ready output
(c) DSR active low (d) DTR active low
3. The higher and lower bytes of a 16-bit register DPTR are represented respectively as CO3- R
(a) LDPTR and HDPTR (b) DPTRL and DPTRH
(c) DPH and DPL (d) HDP and LDP
4. The device that is used for deriving chip select signals is CO4 R
(a) Logic gates (b) Multiplexers (c) PLAs and EPROMs (d) All the above
5. Where is the result stored after an execution of increment and decrement operations over the special - purpose registers in PIC? CO5 R
(a) Power Up Timer (b) Watch Dog timer
(c) Oscillator Start-up timer (d) None of the above

PART – B (5 x 3= 15Marks)

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| 6. | What are the assembler directives there in 8086? | CO1- R |
| 7. | Mention the applications of 8251 IC chip? | CO2- R |
| 8. | Assess about SFR available in 8051. | CO3- R |
| 9. | State the use of start of conversion and end of conversion signal in ADC. | CO4- R |
| 10. | Compare Polling and Interrupt. | CO5- R |

PART – C (5 x 16= 80Marks)

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| 11. | (a) Illustrate the classification of 8086 instructions based on its
(i) Word length (ii) Function
Also give examples. | CO1- App | (16) |
| | Or | | |
| | (b) Deduce functional description of 8086 microprocessor with a neat diagram. | CO1- App | (16) |
| 12. | (a) Discuss how a 8259 is interfaced to an 8086 based system. How does 8259 service an interrupt? | CO2- App | (16) |
| | Or | | |
| | (b) With neat block diagram, explain the description and function of 8255 also explain about BSR mode in 8255. | CO2- Ana | (16) |
| 13. | (a) Describe the working of the 8051 microcontroller. Give a neat sketch. | CO3- Ana | (16) |
| | Or | | |
| | (b) Write an 8051 ALP to create a square wave of 66% duty cycle on bit 3 of port 1. | CO3- Ana | (16) |
| 14. | (a) Describe the basic operation of a stepper motor and also discuss how to interface a stepper motor to 8051. | CO4- U | (16) |
| | Or | | |
| | (b) Discuss about the use of 8051 microcontroller for the traffic light control system with diagram, flow chart and program. | CO4- Ana | (16) |
| 15. | (a) Explain in detail the architecture of PIC microcontroller. Also give a note on RAM & ROM allocation. | CO5- U | (16) |
| | Or | | |
| | (b) Explain in detail Memory Organization and various addressing modes of PIC16F877. | CO5- U | (16) |