

### SECTION-C

**Note:** Long answer type questions. Attempt any three questions. 3x10=30

- Q.3 Draw and explain in detail, Bus architecture of a computer system.
- Q.4 Minimize the following boolean expression by using K-Map  $Y = m(0, 1, 2, 3, 6, 7, 11, 14, 15)$
- Q.5 Explain full adder circuit with the help of truth table and logic diagram.
- Q.6 What is polling? How polling works? Explain in details.
- Q.7 Subtract  $(111010001)_2$  from  $(111101001)_2$  using 2's complement method of subtraction.

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### 4th Sem. / Electrical & Eltx. Engg.

**Subject : Digital electronic and computer Architecture**

Time : 3 Hrs.

M.M. : 100

### SECTION-A

**Note:** Very Short Answer type questions. Attempt any 15 parts. (15x2=30)

- Q.1 a)  $X.(X+Y) = \underline{\hspace{2cm}}$ .
- b) Write truth table for inverter.
- c) Define bit.
- d) What is difference between Octal number and hexadecimal number?
- e) Difference between data and address bus.
- f) Convert binary number  $(1100101010)_2$  into decimal number.
- g) What is Radix?
- h) Write 2's compliment of  $(11001000)_2$

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- i) What is truth table?
- j) What is the use of DMA?
- k)  $X+X=$ \_\_\_\_\_.
- l) Expand LED and LCD.
- m) Draw symbol and truth table of D-type flip flop.
- n) Name any two types of shift registers.
- o) What is the application of A/D converters?
- p) Name any two types of semiconductor memory.
- q) Define peripheral.
- r) Define fast interrupts.
- iii) What is the difference between internal and external interrupts?
- iv) What is the importance of interrupts?
- v) Write a short note on "Memory mapping".
- vi) What is the result of binary multiplication of  $(110011)_2$  and  $(10101)_2$ ?
- vii) How to convert octal number to binary number and vice-versa?
- viii) Write truth table of OR , AND , NOT gate
- ix) Explain Demorgan's theorem.
- x) What is difference between half adder and full adder?
- xi) Write short notes on "Decoders".
- xii) What is flip flop? Name any four flip flops.
- xiii) What are different types of counters?
- xiv) Draw block diagram of successive approximation method of A/D conversion.
- xv) What are merits and demerits of semiconductor memories?

### SECTION-B

**Note:** Short answer type questions. Attempt any ten parts 10x4=40

- Q.2
- i) What is the function of control bus?
  - ii) Explain in detail, DMA.

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