

TDC Even Semester Exam., 2019

COMPUTER APPLICATION

(Honours)

(2nd Semester)

Course No. : BCAC-201

(Computer System Architecture)

Full Marks : 35

Pass Marks : 12

Time : 2 hours

*The figures in the margin indicate full marks
for the questions*

Answer **five** questions, taking **one** from each Unit

UNIT—I

1. (a) Explain the register transfer language (RTL). 3
- (b) Show the block diagram of the hardware that implements the following register transfer statement : 4
- $$yT_2 : R_2 \quad R_1, R_1 \quad R_2$$

2. (a) Represent the following conditional control statement by two register transfer statements with control function : 4
- $$\begin{aligned} &\text{If } (P = 1), \text{ then } (R_1 = R_2) \\ &\quad \text{else if } (Q = 1), \text{ then } (R_1 = R_3) \end{aligned}$$
- (b) A digital computer has a common bus system for 16 registers of 32 bits each. The bus is constructed with multiplexers.
- (i) How many selection inputs are there in each multiplexer?
- (ii) What size of multiplexers are needed?
- (iii) How many multiplexers are there in the bus? 3

UNIT—II

3. Write an assembly program to multiply two positive numbers by a repeated addition method. 7
4. Explain different activities of an assembler with flowchart. 7

(3)

UNIT—III

5. Distinguish between RISC and CISC architecture. 7
6. What are different addressing modes? Explain with an example. 7

UNIT—IV

7. Multiply +15 by -13 using Booth algorithm for multiplication. 7
8. Derive an algorithm for evaluating the square root of a binary fixed point number. 7

UNIT—V

9. What is Direct Memory Access? Explain the working of DMA. 7
10. What are different issues behind serial communication? Explain. 7
