

Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058, India

(Autonomous College Affiliated to University of Mumbai)

Mid Semester Examination

March 2019

SYNOPTIC

Max. Marks: 20

Class: S.E.

Course Code: IT42/CE44

Name of the Course: Computer Organization and Architecture

Duration: 1 Hour

Semester: IV

Branch: IT/Computer

Instruction:

- (1) All questions are compulsory
- (2) Draw neat diagrams
- (3) Assume suitable data if necessary

Q No.		Max. Marks	CO
Q.1	With neat diagram, describe the general structure of IAS computer. 1. Diagram for General Structure of Von Neumann Machine or Structure of IAS Computer = 2 Marks 2. Description of 3 basic components – Input Unit, Output Unit, Control Unit, Memory Unit, ALU = 4 Marks	06	CO1
Q.2	Compute using Booths Algorithm $(12) * (-6)$ Multiplicand = $+12 = 01100 = 0.5$ Mark Multiplier = $-6 = 1010 = 0.5$ Mark Final Answer = $-72 = 10111000 = 3$ Marks OR Apply Restoring Division Algorithm to solve the following example. Dividend = 13 Divisor = 5 1. Dividend = $13 = 01101 = 0.5$ Mark 2. Divisor = $5 = 00101 = 0.5$ Mark 3. Finding correct values for Quotient = $2 = 0010$ and Remainder = $3 = 0011 = 3$ Marks	04	CO2
Q.3	Use Single Precision format compute the following. $(17.18)_{10} + (7.28)_{10}$ 1. Represent 17.18 in Single Precision Format (NF) = $1.000100101 * 2^4 = 1$ Mark 2. Represent 7.28 in Single Precision Format (NF) = $1.1101000 * 2^2 = 1$ Mark 3. Finding correct value for addition = $(10111.10111)_2 = (23.71)_{10} = 2$ Marks (Note: Answer may vary little bit depends on number bit consideration for fractional part) .	04	CO2
Q.4	How data flows occurs in each phase of Instruction cycle? Data Flow in Fetch Cycle with diagram = 2 Marks Data Flow in Indirect Cycle with diagram = 2 Marks Data Flow in Interrupt Cycle with diagram = 2 Marks	06	CO3