

## JAYPEE UNIVERSITY OF INFORMATRION TECHNOLOGY, WAKNAGHAT

## TEST -1 EXAMINATION- 2015

B.Tech I<sup>st</sup> Semester (CSE/IT/ECE/CE/BI)

COURSE CODE: 10B11CI111

MAX. MARKS: 15

COURSE NAME: Introduction to Computers and Programming

COURSE CREDITS: 4

MAX. TIME: 1 HR

*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

1. Justify the following statements with suitable examples, diagrams and mathematical expressions wherever required- **[0.5 Mark x 4 = 2 Marks]**
  - (a) 2's complement representation of the numbers reduces the hardware cost of ALU.
  - (b) N bit word length of a processor signifies the processing power.
  - (c) HTTPS is more secure as compared to HTTP.
  - (d) Instruction register plays an important role in instruction execution cycle.
2. Do the following conversions- **[1 Mark x 2 = 2 Marks]**
  - (a)  $(101110.0111)_2 = (?)_8$
  - (b)  $(133.164)_8 = (?)_{16}$
3. Explain the instruction execution cycle with suitable diagram. **[2 Marks]**
4. Draw the flowchart for the followings logic- **[1 Marks x 2 = 2 Marks]**
  - (a)  $1+2+3+4+\dots+n$
  - (b)  $5*4$  without using  $*$  (Multiplication) operator
5. Perform following arithmetic operations using 2's complement representation on following decimal numbers: **[2 Marks]**
  - (a)  $27 + (-7)$
  - (b)  $(-28) + (-65)$
6. What is the difference between register and memory? Why are registers required? Explain MAR and MDR registers. **[1 Mark + 1 Mark + 1 Mark = 3 Marks]**
7. Write the answer for-
  - (a) Explain typical C program Development Environment.
  - (b) What do you understand by unary and binary operators? List all possible unary and binary operators available in C. **[1 Mark x 2 = 2 Marks]**