

62 S. S. JAIN SUBODH P.G.(AUTONOMOUS) COLLEGE, JAIPUR

Affiliated to University of Rajasthan, Jaipur

II CIA BCA I Semester Test, Oct. - 2018

Fundamentals of Computer Science

Max. Marks: 30

Duration: 1 Hour

---

**Instructions to the Candidates**

Note:- **Section A** : Consists of three short answer type questions, each carrying 7.5 marks. The candidates are required to attempt any two ( $7.5 \times 2 = 15$  marks)

**Section B** : Consists of one descriptive question of 15 marks with an internal choice.

---

**Section A**

- 1) Explain the different parts of CPU.
- 2) Describe the applications of computer.
- 3) Explain any three :
  - a) Bar Code Reader
  - b) OMR
  - c) Joystick
  - d) OCR

**Section B**

- 4) What is Memory ? Explain the memory hierarchy.

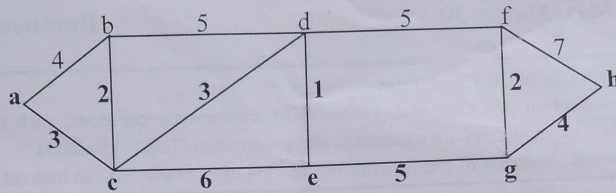
**OR**

Convert the following numbers :

- a)  $(1101011)_2 = ( )_{10}$
- b)  $(428)_{10} = ( )_{16}$
- c)  $(101110)_2 = ( )_8$
- d)  $(11010011)_2 = ( )_{16}$
- e)  $(2AB)_{16} = ( )_2$

**Section B**

Q4) Find the shortest path and its length between the vertices a and h in the following graph



**OR**

With the help of truth table, prove that

i)  $p \rightarrow (q \wedge r) \equiv (p \rightarrow q) \wedge (p \rightarrow r)$

ii)  $\sim(p \vee (\sim p \wedge q)) \equiv (\sim p) \wedge (\sim q)$

iii)  $p \vee (q \wedge r) \equiv (p \vee q)$

S. S. JAIN SUBODH P.G.(AUTONOMOUS) COLLEGE, JAIPUR

Affiliated to University of Rajasthan, Jaipur

II CIA BCA I Semester Test, Oct. 2018

Electric Circuit and Semiconductor Physics

Max. Marks: 30

Duration: 1 Hour

---

**Instructions to the Candidates**

Note:- **Section A** : Consists of three short answer type questions, each carrying 7.5 marks. The candidates are required to attempt any two ( $7.5 \times 2 = 15$  marks)

**Section B** : Consists of one descriptive question of 15 marks with an internal choice.

---

Q1. State and explain Biot – Savrt's Law. Find force between two parallel current carrying wires.

OR

Find magnetic field inside & outside of a solenoid, carrying a current.

Q2. Explain Faraday's Law of electromagnetic induction. Calculate energy stored in an inductor.

OR

Explain magnetic properties of matter. Find current in L – R circuit in charging circuit mode.