M 26588

Reg. No. : .....

Name : .....

I Semester M.A./M.Sc./M.Com. Degree (Reg./Supple./Improve.) Examination, November 2014

PHYSICS

(2014 Admn. Under CBSS)

PHY 1C 04 : Electronics

Time : 3 Hours Max. Marks : 60

SECTION – A

(Answer **both** questions, either **(a)** or **(b)**).

1. a) What are the four differential amplifier configurations ? Which one is not commonly used and explain why ?

OR

b) Draw the basic circuit diagram of a square wave generator using Op. Amp. Comparator and integrator. Describe it's working.

2. a) Draw the circuit of a monostable multivibrator as pulse generator and describe it's working.

OR

b) List the registers in the 8085 microprocessor and explain their function.

(2×12=24)

SECTION – B

(Answer **any four**).

3. a) What is meant by the term operational amplifier ?

b) List the main characteristics of an Op. Amp.

c) Draw the transistor characteristic of a Diff. Amp.

P.T.O.

4. a) How does the transconductance vary with differential voltage ?

   b) Draw the schematic diagram of ideal inverting Op.Amp. and explain.

   c) Draw the schematic diagram of an ideal non-inverting Op.Amp. with voltage series feedback. Derive the expression for the voltage gain.

5. a) Describe the principle of pole-zero compensation method.

   b) Describe the method of measuring slew rate.

   c) Describe an experimental method for determination of poles of an Op.Amp.

6. a) What are the main differences between synchronous and asynchronous logic circuit ?

   b) With a circuit diagram explain flip flop operating characteristics.

   c) Explain the principle and working of a crystal controlled cock generator.

7. a) What is a register ?

   b) Explain the function of a four stage ring counter.

   c) Explain the function of a master-slave JK flip-flop. Explain how it eliminate the race-around condition.

8. a) Show the memory hierarchy.

   b) Explain why is primary memory faster than the secondary memory.

   c) Explain in detail how the main memory of a computer is organized ? How memory cells are arranged to create different types of memories. **(4×9=36)**