

**VPG(4) — Phy (13)**  
**Electro Spl. – I**

**2016-18**

*Time : 3 hours*

*Full Marks : 70*

*Candidates are required to give their answers in their own words as far as practicable.*

*The questions are of equal value.*

*Answer any **five** questions in which Q. No. 1 is compulsory.*

1. Answer any seven of the following :
  - (a) Explain frequency division multiplexing.
  - (b) What is vestigial side band modulator ?
  - (c) What do you mean by side loop configuration ?
  - (d) Give the significance of ferroelectric memories.

- (e) What is bias level transistor ?
- (f) Explain input offset current.
- (g) What is modulation factor ?
- (h) Give the block diagram of superheterodyne receiver.
- (i) Explain switching current.
- (j) What is Clipper ?

2. Give block diagram of an operational amplifier. Discuss the application of op-amp as an adder and subtractor.
3. With circuit diagram, explain the function of a differential amplifier.
4. Discuss Wienbridge oscillator by using op-amp. What are the limitations of R-C and L-C oscillator ?
5. What is Monostable Multivibrator ? Discuss monostable multivibrator using op-amp.
6. What do you mean by Signal Wave and Carrier Wave ? Why the modulation of signal wave is essential.

7. Give the classification and characteristics of memories. Explain SRAM and DRAM.
8. What is Velocity Modulation ? Discuss two Cavity Klystrons.
9. Write short notes on any **two** of the following :
  - (a) CMOS
  - (b) Magnetrons
  - (c) Principle of Oscillator
  - (d) DC and AC analyses

