



- 3** Attempt any **two** : **10**
- (a) Explain Dual Trace CRO with necessary block diagram and also explain advantages and disadvantages of same over dual beam CRO.
  - (b) Explain the working principle of digital frequency meter and for the same explain Time Base Generator in association of same.
  - (c) Explain necessity of Multiplexing. Explain concept of Time Division Multiplexing and demultiplexing in detail with necessary block diagram.
- 4** Attempt any two : **10**
- (a) Explain advantages of active filter over passive filter. Derive the equation of 1<sup>st</sup> order high pass filter.
  - (b) What the importance is of plated through holes (PTH) in multilayer PCB ? Write names of some PCB design software.
  - (c) Design a phase shift oscillator using op-amp and prove the equation of frequency of oscillation.
- 5** Attempt any two : **10**
- (a) Explain the Phase Shift Keying with the help of the block diagram. Also explain relation of bit rate and baud rate in above mentioned scheme.
  - (b) Explain the functionality of Spectrum analyzer along with the suitable block diagram.
  - (c) Explain the circuit which has the mathematical property of integration. How noise in the basic circuit can be removed ? Design integrator with cutoff frequency of 10KHz.
-