

## B.Sc. Sem.-5 Examination

CC - 303

Electronics

Time : 2-30 Hours]

November-2025

[Max. Marks : 70

- Instructions:** (1) All questions carry equal marks.  
 (2) Symbols used here have their usual meanings.  
 (3) Figures to the right indicate marks.

- 1 (A) Draw and explain circuit diagram of Transistor Voltmeter. Draw block diagram of an ac differential voltmeter. **07**  
 (B) With the help of block diagram explain True RMS voltmeter in detail. **07**
- OR**
- (A) Draw the block diagram of chopper type DC amplifier voltmeter and explain function of each block. **07**  
 (B) Draw and explain circuit diagram of Solid State mV voltmeter using Opamp. **07**
- 2 (A) Draw and explain Integrating type DVM (Voltage to Frequency Conversion) in detail. **07**  
 (B) Draw the block diagram of a Successive approximation type DVM and explain it in detail. **07**
- OR**
- (A) Draw and explain block diagram of a staircase ramp type DVM. Also explain Staircase waveform. **07**  
 (B) Draw block diagram of ramp type DVM. Explain Ramp technique in detail with voltage to time conversion diagram. **07**
- 3 (A) Explain the function of delay line. Explain lumped parameter delay line. Write advantages and disadvantages of lumped parameter delay line. **07**  
 (B) With figure explain the diagram of meshless scan expansion postdeflection acceleration cathode ray tube. **07**
- OR**
- (A) Explain Cathode Ray Tube circuits with necessary diagram. **07**  
 (B) Draw block diagram of a general-purpose oscilloscope and explain its working by showing role of each block. **07**
- 4 (A) Write a short note on sine wave generator. **07**  
 (B) How symmetrical or balanced operation for generation of square-wave is achieved in astable multivibrator? Explain in brief. **07**
- OR**
- (A) With the help of figure explain pulse characteristics and terminology. **07**  
 (B) Draw the block diagram of laboratory square wave and pulse generator. Explain the function of electronic switch. **07**
- 5 Attempt any **seven** out of twelve. **14**
- (A) The Chopper eliminates the need for a high gain dc amplifier with its inherent drift and \_\_\_\_\_ problems.  
 (B) The input impedance of a Chopper Amplifier is usually of the order of \_\_\_\_\_ MΩ.  
 (C) In solid state voltmeter, two diodes are used for \_\_\_\_\_ protection.  
 (D) The dual slope technique has excellent noise rejection because noise and superimposed ac are averaged out in the process of \_\_\_\_\_.  
 (E) Integrating type DVM has the disadvantage that it requires excellent characteristics in linearity of the \_\_\_\_\_.  
 (F) The resolution of a DVM is determined by the number of full or \_\_\_\_\_ digits used.  
 (G) The screen material on the inner surface of the CRT that produces this effect is the \_\_\_\_\_.  
 (H) \_\_\_\_\_ is a function of the physical characteristics of the phosphor itself.  
 (I) There are basically two kinds of delay line: the lumped parameter delay line and the \_\_\_\_\_ parameter delay line.  
 (J) When the maximum amplitude of the pulse is not constant but decreases slowly, the pulse is said to \_\_\_\_\_ or sag.  
 (K) In simplified current source operation, the size of \_\_\_\_\_ capacitor is selected by the multiplier switch.  
 (L) \_\_\_\_\_ wave generators are used whenever the low frequency characteristics of a system are being investigated.