

**5.9 Two Marks Question and Answers**

1. What is Blocking Oscillator?

A special type of wave generator which is used to produce a single narrow pulse or train of pulses using regenerative feedback characteristics are called Blocking oscillator.

2. What are Time Base generators?

The circuits which provide an output waveform, a part of which is characterized by a linear variation of voltage or current with respect to time are called Time Base generators.

3. What is UJT?

- i. UJT is a three terminal semiconductor switching device.
- ii. As it has only one PN junction and three leads, it is commonly called as Uni-junction transistor.

4. What are the two important elements of Blocking Oscillator?

Transistor and pulse transformer

5. What are the applications of blocking Oscillator?

It is used in frequency dividers, counter circuits and for switching the other circuits.

6. Give the expression for co-efficient of coupling

$$K = M / \sqrt{L_p L_s}$$

M->Mutual Inductance,  $L_p$  -> Primary Inductance,  $L_s$  -> Secondary Inductance

7. Give the formula for transformation ratio

$$n = N_s / N_p = \text{transformation ratio}$$

$N_s$ = Secondary Turns;  $N_p$ = Primary turns

8. Define rise time.

It is defined by the time required by the pulse to rise from 10% of its amplitude to 90% of its amplitude.

9. Define overshoot.

It is the amount by which the output exceeds its amplitude during first attempt.

10. What is leading edge response?

At start there is an overshoot and then pulse settles down. The response till it settles down after the overshoot is called leading edge response.

11. What is trailing edge response?

The response generally extends below the zero amplitude after the end of pulse width is called back swing. The portion of response from back swing till it settles down is called trailing edge response.

12. Define flat top response.

The portion of the response between the trailing edge and the leading edge is called flat top response.

13. Define droop or a tilt.

The displacement of the pulse amplitude during its flat response is called droop or a tilt.

14. What are the applications of pulse transformer?

Pulse transformer can be used to

- i. Change the amplitude and impedance level of a pulse.
- ii. Invert the polarity of the pulse.
- iii. Produce a pulse in a circuit having negligible d.c. resistance.
- iv. Differentiate a pulse.
- v. Act as a coupling element in a certain pulse generating circuits.

15. What is the other name of saw tooth generator?

Ramp generator.

16. Define Displacement error in the saw tooth generator?

It is defined as the maximum differences between the actual sweep voltage and linear sweep which passes through the beginning and end points of the actual sweep.

17. What is constant current charging?

A capacitor is charged with a constant current source.

18. What is the miller circuit?

Integrator is used to convert a step waveform into ramp waveform.

19. Mention the various methods of controlling the pulse.

- i. Use of common base configuration.
- ii. Use of common collector configuration.
- iii. Use of core saturation method.
- iv. Use of shorted delay line.

20. What is mark space ratio?

The ratio of time for which Q is On to time for which Q is OFF is called mark- space ratio. If this is unity, then the output is almost symmetrical square wave.

21. Define Duty cycle.

The duty cycle is defined as the ratio of the ON time  $t_p$  to the time period T. Mathematically it is given by,  $D = t_p/T$

22. What do you mean by voltage time base generators?

Circuits used to generate a linear variation of voltage with time are called Voltage time-base generators.

23. What do you mean by linear time base generators?

Circuits provide an output waveform which exhibits a linear variation of voltage with time are called linear time base generators.

24. Define restoration time or flyback time.

The time required for the return for the sweep voltage to the initial value is called restoration time (or) return time (or) flyback time.

25. Define sweep time.

The period during which voltage increases linearly is called sweep time.

26. List important sweep parameters.  
Sweep speed error, Displacement error and transmission error.
27. Name the different errors in generation of sweep waveforms.  
Sweep speed error, Displacement error and transmission error.
28. Define Sweep speed error.  
It is the ratio of difference in slope at beginning and end of sweep to the initial value of slope.
29. Define Displacement error.  
It is defined as the maximum difference between the actual sweep voltage and linear sweep which passes through the beginning and end points of the actual sweep.
30. Define transmission error.  
When a ramp voltage is transmitted through a high-pass RC network, its output falls away from the input. The transmission error is defined as the difference between the input and output divided by the input.