

Telecom Question Papers

If the voltage applied across a capacitance is triangular in waveform then the waveform

of the current is-

- a) Triangular
- b) Trapezoidal
- c) Sinusoidal
- d) Rectangular

Answer is :- Rectangular

1. One of the following statement which is true for relative dielectric constant is -

- a) It is dimensionless
- b) It is not equal to unity for vacuum
- c) It's value for all substances is less than one
- d) None

Answer is :- It is dimensionless

2. Pure metals generally have-

- a) high conductivity and low temperature coefficient
- b) high conductivity and large temperature coefficient

c) low conductivity and zero temperature coefficient

d) low conductivity and high temperature coefficient

Answer is :- high conductivity and large temperature coefficient

3. For small size, high frequency coils, the most common core material is

a) Air

b) Ferrite

c) Powdered iron

d) Steel

Answer is :- Air

4. For an abrupt junction Varactor diode, the dependence of device capacitance (C) on

applied reverse bias (V) is given by-

a) $C \propto V^{1/3}$

b) $C \propto V^{-1/3}$

c) $C \propto V^{1/2}$

d) $C \propto V^{-1/2}$

Answer is :- $C \propto V^{-1/3}$

5. A superconductor is a-

- a) A material showing perfect conductivity and Meissner effect below a critical temperature
- b) A conductor having zero resistance
- c) A perfect conductor with highest diamagnetic susceptibility
- d) A perfect conductor which becomes resistive when the current density through it exceeds a critical value

Answer is :- A material showing perfect conductivity and Meissner effect below a critical temperature

6. When a semiconductor based temperature transducer has a temperature coefficient of –

2500 mV/°C then this transducer is indeed a-

- a) Thermistor
- b) Forward biased pn junction diode
- c) Reverse biased pn junction diode
- d) FET

Answer is :- Forward biased pn junction diode

7. The location of lightning arrestor is -

- a) Near the transformer

- b) Near the circuit breaker
- c) Away from the transformer
- d) None

Answer is :- Near the transformer

8. Time constant of an RC circuit increases if the value of the resistance is -

- a) Increased
- b) Decreased
- c) Neither a nor b
- d) Both a and b

Answer is :- Increased

9. Intrinsic semiconductors are those which -

- a) Are available locally
- b) Are made of the semiconductor material in its purest form
- c) Have more electrons than holes
- d) Have zero energy gaps

Answer is :- Are made of the semiconductor material in its purest form

10. The primary control on drain current in a JFET is exerted by -

- a) Channel resistance

- b) Size of depletion regions
- c) Voltage drop across channel
- d) Gate reverse bias

Answer is :- Gate reverse bias

11. The electrical conductivity of metals which is expressed in $\text{ohm}^{-1} \text{m}^{-1}$ is of the order

of -

- a) 10¹⁰
- b) 10⁵
- c) 10⁻⁴
- d) 10⁻⁶

Answer is :- 10⁵

12. When biased correctly, a zener diode –

- a) acts as a fixed resistance
- b) has a constant voltage across it
- c) has a constant current passing through it
- d) never overheats

Answer is :- has a constant voltage across it

13. The current amplification factor a_{dc} is given by –

- a) I_C/I_E
- b) I_C/I_B
- c) I_B/I_C
- d) I_B/I_C

Answer is :- I_C/I_E

14. Compared to bipolars, FETs have-

- a) high input impedance
- b) low input impedance
- c) same input impedance
- d) none

Answer is :- high input impedance

15. The source-drain channel of JFET is -

- a) ohmic
- b) bilateral
- c) unilateral
- d) both a and b

Answer is :- both a and b

16. diac is equivalent to a -

- a) Pair of SCRs
- b) Pair of four layer SCRs
- c) Diode and two resistors
- d) Triac width

Answer is :- Pair of four layer SCRs

17. When a sample of N type semiconductor has electron density of 6.25×10^{11} /cm³ at 300K and if the intrinsic concentration of carriers in this sample is 2.5×10^{13} /cm³ then the hole density will be –

- a) 10^6 /cm³
- b) 10^3 / cm³
- c) 10^{10} / cm³
- d) 10^{12} / cm³

Answer is :- 10^3 / cm³

18. The statement ‘In any network of linear impedances, the current flowing at any point is equal to the algebraic sum of the currents caused to flow at that point by each of the sources of emf taken separately with all other emf’s reduced to zero’ represents -

- a) Kirchhoff’s law

- b) Norton's theorem
- c) Thevenin's theorem
- d) Superposition theorem

Answer is :- Superposition theorem

19. One of the following modes which has the characteristics of attenuation becoming less as the frequency is increased and is attractive at microwave frequencies of circular cylindrical wave guides is –

- a) TE₁ mode
- b) TM₀₁ mode
- c) TE₀₁ mode
- d) Higher order mode

Answer is :- TE₀₁ mode

20. A two-port network is symmetrical if –

- a) $z_{11}z_{22} - z_{12}z_{21} = 1$
- b) $h_{11}h_{22} - h_{12}h_{21} = 1$
- c) $AD - BC = 1$
- d) $y_{11}y_{22} - y_{12}y_{21} = 1$

Answer is :- $AD - BC = 1$

21. For transmission line load matching over a range of frequencies, it is best to use a-

- a) balun
- b) broad band directional coupler
- c) double stub
- d) single stub of adjustable position

Answer is :- double stub

22. The poles and zeros of a driving point function of a network are simple and interlace on the negative real axis with a pole closest to the origin. It can be realised -

- a) by an LC network
- b) as an RC driving point impedance
- c) as an RC driving point admittance
- d) only by an RLC network

Answer is:- only by an RLC network

23. Poles and zeros of a driving point function of a network are simple and interlace on the $j\omega$ axis. The network consists of elements –

- a) R and C
- b) L and C

c) R and L

d) R, L and C

Answer is :- L and C

24. For a two port reciprocal network, the output open circuit voltage divided by the input current is equal to –

a) B

b) Z_{12}

c) —

d) h_{12}

Answer is :- Z_{12}

25. In a short electric doublet the radiation properties are so that-

a) The induction field diminishes as the square root of the distance and is only appreciable in the vicinity of the conductor.

b) In the radiation, magnetic field is minimum when the current is maximum.

c) The radiation resistance of a short doublet antenna is extremely high.

d) Mean rate of power through a unit area of spherical sphere surrounding this doublet is <https://www.freshersnow.com/previous-year-question-papers/> proportional to the square of the elemental length, other factors remaining constant.

Answer is :-Mean rate of power through a unit area of spherical sphere surrounding this doublet is proportional to the square of the elemental length, other factors remaining constant.

26. The frequency modulated (FM) radio frequency range is nearly -

- a) 250 –300 MHz
- b) 150 – 200 MHz
- c) 90 – 105 MHz
- d) 30-70 MHz

Answer is :-90 – 105 MHz

27. In an underground cable the distortion in the transmission of carrier frequency can be

eliminated by using -

- a) Inductive loading
- b) Resistive loading
- c) Capacitive loading
- d) Shielding

Answer is :- Inductive loading

28. The characteristic impedance of a transmission line with inductance 0.294 mH/m and capacitance 60 pF/m is -

- a) 49 W
- b) 60 W
- c) 70 W
- d) 140 W

Answer is :- 70 W

30. For a quarter wavelength ideal transmission line of characteristic impedance 50 ohms and load impedance 100 ohms , the input impedance will be –

- a) 25W
- b) 50W
- c) 100W
- d) 150W

Answer is :- 25W