

# Electronics Question Bank-1

Questions Collected from Candidates Appeared for Various Competitive Examinations  
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1. With  $n$  nodes and  $b$  branches a network will have –

a.)  $(b + n)$  links

b.)  $b - n + 1$  links

c.)  $b - n - 1$  links

d.)  $b + n + 1$  links

(Bosch)

2. A network contains linear resistors and ideal voltage sources. If values of all the resistors are doubled, then voltage across each resistor is

a) Halved

b) Doubled

c) Increase by 4 times

d) Remains the same

(Bosch)

3. Maxwell's loop current method of solving electrical networks –

a) Uses branch currents

b) Utilizes Kirchhoff's voltage law

c) Is confined to single-loop circuits

d) Is a network reduction method

(Bosch)

4. A yagi antenna has a driven antenna-

a) Only

b) With a reflector

C) With one or more directors

d) With a reflector and one or more directors

(BSNL JTO, TTA)

5. In a JFET gates are always –

a) forward biased

b) Reverse biased

c) Unbiased

d) None

6. Schering bridge is used to measure

a) frequency

b) inductance

c) capacitance

d) mutual inductance

7. What is the easier method for finding no. of poles in the right half of s-plane?

a) Nyquist plot

b) R-H criterion

c) Root-Locus method

d) Polar plot

8. A source of angular frequency 1 rad/sec and source impedance consisting of 1 ohm resistance with 1H inductance. The load that will obtain maximum power transfer is

a) 1ohm resistance

b) 1ohm resistance in parallel with 1H inductance

c) 1ohm resistance in series with 1 F capacitance

d) 1ohm resistance in parallel with 1 F capacitance.

9. Super position theorem is NOT applicable to networks containing

a) Non linear elements

b) Dependant voltage sources

c) Dependant current sources

d) Transformers

10. Electrical contact materials used in switches, brushes and relays must possess –

a) High thermal conductivity and high melting point

b) Low thermal conductivity and low melting point

c) High thermal conductivity and low melting point.

d) Low thermal conductivity and high melting point.

11. Thermal Run away is not possible in FET because of the absence of

a) minority carriers

b) Transconductance

c) Channel

d) none

12. When a signal of 10 mV at 75 MHz is to be measured then which of the following instrument can be used -

a) VTVM

b) Cathode ray oscilloscope

c) Moving iron voltmeter

d) Digital multimeter

13. As the drain voltage is increased for a junction FET in the pinch off region then the drain current –

- a) Becomes zero
- b) Abruptly decreases
- c) Abruptly increases
- d) Remains constant

14. One of the following, which is not a transducer in the true sense, is –

- a) Thermocouple
- b) Piezoelectric pick up
- c) Photo-Voltaic cell
- d) LCD

15. A lag compensator is basically a –

- a) high pass filter
- b) band pass filter
- c) low pass filter
- d) band elimination filter

16. The storage and retrieval of data on stacks should follow sequence-

- a) last in first out
- b) first in first out
- c) random in random out
- d) none

17. Universal logic gate is

- a) AND
- b) OR
- c) NAND
- d) X-OR

18. Major advantage of TWT over a klystron lies in its –

- a) higher bandwidth
- b) higher output
- c) higher frequency
- d) higher gain

19. Common Base Configuration has

- a) Low input resistance and low output resistance
- b) Low input resistance and high output resistance
- c) High input resistance and low output resistance
- d) High input resistance and high output resistance

20. The popular IC 741 is

- a) Voltage regulator
- b) Comparator
- c) Operational amplifier

d) Timer (AIR)

21. If Modulation index of an AM system is varied from 0 to 1, then transmitted power

a) Halves

b) doubles

c) remains the same

d) increased by 50% (ONGC,AIR)

22. The modulation scheme where each bit is represented by phase shifts of carrier is

a) ASK

b) PSK

c) FSK

d) PPM (AIR-DD)

23. Which of the following was used for digital transmission?

a) PAM

b) PPM

c) PWM

d) PCM (AIR-DD)

24. Modulation system employed in Video broad cast of TV is

a) AM

b) PM

c) FM

d) PCM

(AIR-DD)

25. Modulation system employed in Audio broad cast of TV is

a) AM

b) PM

c) FM

d) PCM

26. Human eye is most sensitive to?

a) Blue

b) Green

c) Red

d) Violet

27. The forbidden energy gap of semiconductors is in the order of

a) 1MeV

b) 1eV

c) 10eV

d) 10MeV

28. Ripple frequency of a bridge rectifier operated in 10V,50Hz line is

a) 50Hz

b) 100Hz

c) 150Hz

d) 25Hz

29. With introduction of –ve feed back, the Gain – Bandwidth product of an amplifier

a) Becomes infinity

b) decreases

c) increases

d) Remains constant

30. RC Coupled amplifier with no Emitter bypass capacitor is an example of

a) Voltage series feedback

b) Voltage shunt feedback

c) Current series feedback

d) Current shunt feedback

## *SOLUTIONS*

1. (b)  $b-n+1$  links
2. (d) Remains the same
3. (b) utilizes kirchhoff's voltage law
4. (d) With a reflector and one or more directors
5. (b) reverse biased

6. (c) capacitance
7. (b) R-H criterion
8. (c) 1ohm resistance in series with 1 F capacitance. For maximum power transfer the load impedance must be the complex conjugate of source impedance. Here  $R_s=1+j$  ;  $R_L$  must be  $1-j$
9. (a) Non linear elements
10. (a) High thermal conductivity and high melting point
11. (a) FET is unipolar so there are no minority careers .Thermal run away occurs when minority careers are present.
12. (b) Cathode ray oscilloscope- Displays wave forms clearly even at low voltage and high frequency.
13. (d) Remains constant.
14. (d) LCD- Liquid Crystal Display.
15. (c) low pass filter
16. (a) last in first out
17. (c) NAND ( also NOR)
18. (d) Higher gain
19. (b) Low input resistance and high output resistance
20. (c) Operational amplifier
21. (d) Increased by 50%  $P_t = P_c ( 1+(m^2)/2)$  where m is the modulation index,  $P_t$  transmitted power and  $P_c$  Carrier power. When  $m=0$ ;  $P_t = P_c$  When  $m=1$   $P_t=1.5P_c$
22. (b) PSK-Phase Shift Keying.
23. (d) PCM- Pulse Code Modulation
24. (a) AM- (Specifically Vestigial side band AM)
25. (c) FM
26. (b) Green
27. (b)1eV (0.67 for Ge, 1.4 for Si)
28. (b)100Hz
29. (d)Remains constant. Bandwidth increases by the same amount as reduction in gain  $(1+AB)$ ; So GBW product remains the same.
30. (c) Current series feedback

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