

# ENGINEERING ACADEMY DEHRADUN

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## ELECTRICAL PAPER

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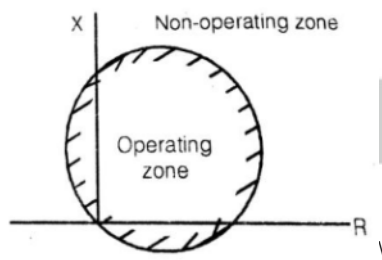
1. The most suitable device for high frequency inversion in SMPS is
  - a) BJT
  - b) IGBT
  - c) MOSFET
  - d) GTO
2. In case of voltage source inverter, free-wheeling can be needed for the load of
  - a) Inductive nature
  - b) Capacitive nature
  - c) Resistive nature
  - d) Back emf nature
3. In a thyristor- controlled rectifier, the firing angle of thyristor is to be controlled in the range of
  - a)  $0^\circ$  to  $90^\circ$
  - b)  $0^\circ$  to  $180^\circ$
  - c)  $90^\circ$  to  $180^\circ$
  - d)  $90^\circ$  to  $270^\circ$
4. A four quadrant chopper cannot be operated as
  - a) One quadrant chopper
  - b) Cycloconverter
  - c) Inverter
  - d) Bi-directional rectifier
5. The snubber circuit is used in thyristor circuits for
  - a) triggering
  - b) dv/dt protection
  - c) di/dt protection
  - d) phase shifting
6. Triac cannot be used in
  - a) ac voltage regulators
  - b) cycloconverters
  - c) solid state type of switch
  - d) inverter
7. Quantization noise occurs in
  - a) Pulse amplitude modulation
  - b) Pulse width modulation
  - c) Pulse code modulation
  - d) Pulse position modulation
8. In case of data transmission, which one of the following systems will give the maximum probability of error?
  - a) ASK
  - b) FSK
  - c) PSK
  - d) DPSK
9. A modulator is a device to
  - a) Separate two frequencies
  - b) Impress the information on to a radio frequency carrier
  - c) Extract information from the carrier
  - d) Amplify the audio frequency signal
10. In an AM signal when the modulation index is one, the maximum power  $P_t$  (where  $P_c$  is the carrier power) is equal to
  - a)  $P_c$
  - b)  $1.5P_c$
  - c)  $2P_c$
  - d)  $2.5P_c$
11. A microprocessor is ALU
  - a) And control unit on single chip
  - b) And memory on a single chip
  - c) Register unit and I/O device on a single chip
  - d) Register unit and control unit on a single chip
12. A Direct Memory Access (DMA) transfer implies
  - a) Direct transfer of data between memory and accumulator
  - b) Direct transfer of data between memory and I/O devices without the use of micro-processor
  - c) Transfer of data exclusively within micro-processor registers
  - d) A fast transfer of data between micro-processor and I/O devices
13. The number of output pins of a 8085 microprocessor are
  - a) 40
  - b) 27
  - c) 21
  - d) 19
14. Which one of the following circuits transmits two messages simultaneously in one direction?
  - a) Duplex
  - b) Diplex
  - c) Simplex
  - d) Quadruplex
15. To add two m-bit numbers, the required number of half adders is
  - a)  $2m-1$
  - b)  $2^m-1$
  - c)  $2m+1$
  - d)  $2m$
16. The Darlington pair is mainly used for
  - a) Impedance matching
  - b) Wideband voltage amplification
  - c) Reducing distortion
17. Early effect in BJT refers to
  - a) Avalanche breakdown
  - b) Thermal runaway
  - c) Base narrowing

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- d) Zener breakdown
18. The decimal equivalent of hexadecimal number of 2A0F is
- a) 17670            b) 17607  
c) 17067            d) 10767
19. For transmission line which one of the following relations is true?
- a)  $AD-BC = 1$             b)  $-AD-BC = 1$   
c)  $AD-BC = -1$             d)  $AD-BC = 0$
20. The operating characteristic of a distance relay in the R-X plane is shown in the figure below. It represents operating characteristic of a



- a) Reactance relay  
b) Directional impedance relay  
c) Impedance relay  
d) Mho relay
21. Which one of the following relay has the capability of anticipating the possible major fault in a transformer?
- a) Over current relay  
b) Differential relay  
c) Buchholz relay  
d) Over fluxing relay
22. If all the sequence voltages at the fault point in a power system are equal, then the fault is a
- a) Three- phase fault  
b) Line to ground fault  
c) Line to line fault  
d) Double line to ground fault
23. The good effect of corona on overhead lines is to
- a) Increase the line carrying capacity due to conducting ionised air envelop around the conductor  
b) Increase the power factor due to corona loss  
c) Reduce the ratio interference from the conductor

- d) Reduce the steepness of surge fronts
24. In a short transmission line, voltage regulation is zero when the power factor angle of the load at the receiving end side is equal to
- a)  $\tan^{-1}(X/R)$             b)  $\tan^{-1}(R/X)$   
c)  $\tan^{-1}(X/Z)$             d)  $\tan^{-1}(R/Z)$
25. Which of the following transducers is classified as an active transducer?
- a) Metallic strain gauge  
b) Capacitive microphone  
c) LVDT  
d) Piezoelectric transducer
26. An energy – meter having a meter constant of 1200 rev per kWh is found to make 5 revolutions in 75s. The load power is
- a) 500W            b) 100W  
c) 200W            d) 1000W
27. The circuit generally used in digital instruments to convert sine waves into rectangular pulses is a
- a) Saw tooth generator  
b) Differential amplifier  
c) Sample and hold circuit  
d) Schmitt trigger
28. Two meters X and Y require 40 mA and 50 mA, respectively, to give full-scale deflection, then
- a) sensitivity can not be judged with given information  
b) both are equally sensitive  
c) X is more sensitive  
d) Y is more sensitive

**For answer key send your mobile number at 08449597123(watsapp).**