

## ELECTRONICS ENGINEERING

### **1. Just as a voltage amplifier signal voltage a power amplifier.**

- 1.amplifier power
- 2.amplifier signal
- 3.converts the signal ac power into DC power
- 4.converts a dc power into useful AC power

### **2.Cross over distortion in class - B push-p amplifiers:**

1. Is due to transistor operating near saturation region
2. Can be eliminated by operating them in class operation
3. Occurs because two power transistors do not exactly matching parameters
4. Always occurs in low signal area

### **3. If the load p.f. is 0.866, then the average p.f. the v-bank is**

1. 0.886
2. 0.75
- 3.0.51
4. 0.65

### **4.AT-T connection has higher ratio of utiliza<sup>x</sup> that n a V - V connection only when**

1. Identical transformers are used
2. Load power factor is leading
3. Load power factor is unity
4. Non-identical transformers are used

### **5. A commercial power supply has a voltage regulation of:**

1. 1%
- 2.5%
- 3.20%
- 4.50%

### **6. Which stage is of a d.c. power supply uses zener diode**

1. Rectifier
2. Voltage divider
3. Filter
4. Regulator

### **7. Which rectifier requires 4 diodes ?**

1. half wave rectifier
2. full wave rectifier
3. bridge type rectifier
4. Voltage quadrupler

**8. The advantage of dynamic RAMs over static RAMs is**

1. Lower power consumption
2. Higher power consumption
3. Higher packing density
4. Lower packing density

**9. The address range for M = 64 words storage in hexadecimal format is**

1. 00 to 3F
2. 00 to FF
3. 0 to 3
4. 0 to F

**10. The 8085 is a – microprocessor**

1. 4 bit
2. 8 bit
3. 16 bit
4. 32 bit

**11. The voltage gain of a common base amplifier depends on**

1. Load resistor  $R_L$
2. input resistance of transistor
3.  $\alpha$
4. All the above

**12. A JFET has the disadvantage of**

1. Having low input impedance
2. Having high output impedance
3. Having small gain band-width product
4. Possessing positive temperature coefficient

**13. A FET is preferred over an ordinary transistor because it**

1. Permits high degree of isolation between input & output circuits
2. Has low noise level
3. Has very high power gain
4. Has all the above properties

**14. To turn a UJT ON, the forward bias on emitter diode should be:**

1. more than the peak point voltage
2. less than the peak point voltage
3. Equal to the peak point voltage
4. Equal to the stand - off voltage

**15. Which of the following statements is wrong for transistor biasing methods:**

1. The base resistor method does not provide stabilization of operating point
2. The biasing with feedback resistor provides only some stabilization
3. Base resistor method provides better stabilization than collector feedback method

4. Voltage divider bias is widely used because it has stable operating point

**16. The disadvantage of voltage divider bias is that**

1. it has a high stability factor
2. it has many resistors
3. it allows thermal runaway
4. it does not allow faithful amplification

**17. In class-A amplifier conduction extends over 360° because the operating point.**

1. Located near saturation point
2. Located at or near cut-off point
3. Located on load line
4. Located in the centre of load line

**18. The capacitance of reverse biased P-N junction**

1. Decreases with increasing the reverse bias
2. Increases with increasing the reverse bias
3. Depends only on reverse saturation current
4. Makes the P-N junction more effective at high frequencies

**19. In a transistor**

1. Emitter is heavily doped while the collector is moderately doped
2. Collector base junction is forward biased
3. Emitter is made wider than collector
4. The input resistance is much higher than output resistance

**20. If a transistor were operated with emitter and collector interchanged, then**

1. emitter current will increase
2. Collector current will increase
3. Base current will decrease
4. No current flow will take place

**21. When a current flows in a conductor, the order of magnitude of the drift velocity of electrons in it is**

1.  $10^{10}$  cm/s
2.  $10^{-2}$  cm/s
3.  $10^4$  cm/s
4.  $10^{-1}$  cm/s

**22. When an alternating potential is applied to a capacitor, the current in the circuit will**

1. lead the applied potential
2. lag the applied potential
3. be in phase with the applied potential
4. none

**23. In application of superposition theorem, one is required to solve as many circuits as there are**

1. Nodes
2. Branches
3. Meshes
4. Sources

**24. Norton's equivalent of a circuit consists of a**

1. Constant current generator with parallel impedance
2. Constant current generator in series with an infinite resistance
3. Constant current generator in parallel with high impedance
4. Constant current generator in series with low impedance

**25.. We require a resistor of 47 K  $\Omega$ - with  $\pm 10\%$  tolerance. The sequence of colour band on this resistor would be**

1. Yellow, violet, orange & silver
2. Yellow, brown, orange & silver
3. Yellow, violet, orange & gold
4. Yellow, violet, brown & gold

**26.. The high level language can be translated into machine language with the help of**

1. Assembler
2. Stack pointer
3. Compiler
4. Multiplexer

**27. The Intel 8259 is a - chip programmable interrupt controller**

1. Single
2. Double
3. Triple
4. All of the above

**28. An analog voltage in the range of 0 to V volts into be converted into 3-bit digital output. It is divided into eight intervals. The top & the bottom intervals are  $V/14$  & the middle six intervals are  $V/7$ . The maximum quantization error will be:**

1. 0
2.  $\frac{V}{7}$
3.  $\frac{V}{14}$
4. V

**29. Frequency of oscillation of an AMV depends upon**

1. RC values of the circuit
2. Collector load resistors
3. Transistor
4. Width of input pulse

**30. Multivibrators can be used as:**

1. Frequency dividers
2. Memory elements in computers
3. Square wave, saw tooth & pulse generators
4. All the above

**31. The permeability of a diamagnetic material is**

1. Zero
2. Less than 1
3. Equal to 1
4. More than 1

**32. The potential barrier at a P - N junction is due to**

1. Majority carriers
2. Minority carriers
3. Both majority and minority carriers
4. Fixed donor and acceptor ions

**33. These self inductance of a circuit is defined as twice the work done against the induced e.m.f. on establishing unit current in the coil. If the current to be established in the coil is doubled, the work done against the induced e.m.f. will be**

1. Doubled
2. Halved
3. four times
4. Quarter times

**34. The drift velocity of free electrons in a conducting wire carrying a current  $I$  is  $V$ . If in a wire of the same metal, but of double the radius, the current be  $2I$ , then the drift velocity of electrons will be**

1.  $V$
2.  $\frac{V}{2}$
3.  $\frac{V}{4}$
4.  $4V$

**35. A commercial power supply has a voltage regulation of**

1. 1%
2. 2.5%
3. 3.20%
4. 4.50%

**36. In a bridge rectifier**

1. PIV has a value  $V_m$
2. Centre tap of secondary is not required
3. Smaller transformer can be used
4. All

**37. In an R-2R ladder D/A converter, the input resistance is**

1. Not same for all digital inputs
2. R for each input
3. 2R for each input
4. 3R for each input

**38. The speed of a D.C. motor can be controlled by varying**

1. Its flux per pole
2. Resistance of armature circuit
3. Applied voltage
4. All of the above

**39. The chief advantage of Ward-Leonard system D.C. motor speed control is that is**

1. Can be used even for small motors
2. has high overall efficiency at all speeds
3. Gives smooth, sensitive and wide speed control
4. Uses a flywheel to reduce fluctuations in power demand

**40. A transformer transforms**

1. Frequency
2. Voltage
3. Current
4. Voltage and current

**41. Which of the following is not a basic element of a transformer ?**

1. Core
2. Primary winding
3. Secondary winding
4. Mutual flux

**42. The slight curvature at the lower end of the O.C.C. of a self-excited dc generator is due to**

1. residual pole flux
2. high armature speed
3. magnetic inertia
4. high field circuit resistance

**43. for the voltage built-up a self-excited D.C. generator, which of the following is not an essential condition.**

1. there must be some residual flux
2. field winding mmf must aid the residual flux
3. total field circuit resistance must be less than its critical value
4. armature speed must be very high

**44.The Intel 8212 is an - non programmable I/O port**

1. 4 - bit 2. 8 - bit 3. 16 - bit 4. 32 – bit

**45.. The terms 'soft sectored' and 'hard sectored' are used in connection with**

1.  $\mu$ P            2. RAM  
3. ROM            4. Floppy disk

**46.In temperature monitoring system - transducers are used**

1. 2    2. 3    3.4    4. 6

**47.Today most computers use-technology for their operation**

1. Germanium        2. Silicon  
3. Gallium - Arsenide 4. Gallium - telluride

**48.In a multivibrator**

- 1.feedback between two stages is 100%  
2.positive feedback is employed  
3.when one transistor is on, the other is off  
4.all

**49.An OP-AMP can be classified as**

- 1.Linear amplifier  
2.Low - Rin amplifier  
3.Positive - feedback amplifier  
4.RC - coupled amplifier

**50.Amplification factor of a circuit is 50. For oscillator is feedback factor should be**

- 1.50    2.100    3. $\frac{1}{50}$     4. $\frac{1}{100}$

**51. Positive feedback is used in**

1. Amplifier 2. Rectifier 3.Oscillator 4. Detector

**52. Darlington pair**

- 1.is a three terminal device with very high current gain  
2.has a very high input impedance  
3.has a very low output  
4.all the above are true

**53.Which of the following has got a positive susceptibility**

- 1.Diamagnetic  
2.Paramagnetic  
3.Ferromagnetic  
4.both Paramagnetic & ferromagnetic

**54. In a tunnel diode, electrons can tunnel through the P-N junction mainly because**

1. impurity level is low
2. they have high energy
3. barrier potential is very low
4. depletion layer is extremely thin

**55. Most of the transistors are NPN type and not PNP type because**

1. NPN transistor gives large voltage gain
2. NPN transistors are more negative than PNP transistors
3. In NPN transistor, the current conduction is by free electrons which are less mobile than holes
4. We can have high conduction in NPN transistors

**56. In a transistor**

1. Emitter is heavily doped while the collector is moderately doped
2. Collector-base junction is forward biased
3. Emitter is made wider than collector
4. The input resistance is much larger than output resistance

**57. If the instantaneous current in a circuit is given  $I = 2 \cos(t + \phi)$  amperes, the r.m.s. value of the current is**

1. 2 amp
2.  $\sqrt{2}$  amp
3.  $2\sqrt{2}$  amp
4. Zero amp

**58. In an A.C. circuit, voltage and current are given  $V = 100 \sin(100t)$  volts and  $i = 100 \sin(10t + \frac{\pi}{3})$  mA. The power dissipated in the circuit is**

1.  $10^4$  watts
2. 10 watts
3. 2.5 watts
4. 5 watts

**59. A 0.05 H-F capacitor charges through a resistor and is discharged through a resistor of 20K  $\Omega$ . The time constant of the circuit is**

1. the same both during charging and discharging
2. larger during charging process
3. larger during discharging process
4. none

**60. The basic element of a radio communication system which generates radio waves is**

1. microphone
2. transmitter
3. transmitting antenna
4. Loudspeaker

**61. The input frequency of a bridge rectifier is 50 Hz, its output frequency will be**

1. 25 Hz
2. 50 Hz
3. 75 Hz
4. 100 Hz

**62. Which of the following voltage is used to represent binary '1' in digital circuits .**

1. 0 V   2. 15 V   3. +5 V   4. 25 V

**63. Hexadecimal number system is used as a shorthand language for representing**

1. decimal number   2. binary number  
3. octal number   4. all the above

**64. Logic state 0 in positive logic corresponds to**

1. zero voltage   2. positive voltage  
3. higher voltage level   4. lower voltage level

**65. The o/p of a 2 - input OR gate is 1 when its**

1. both inputs are 1   2. both inputs are 0  
3. either input is 1   4. either input is 0

**66. TTL logic family is most popularly used in industries because it**

1. provides greater operating speed  
2. has a good fan in & fan out  
3. has easy interface with other digital circuitry  
4. all the above

**67. Transformer cores are laminated in order to**

1. simplify its construction  
2. minimise eddy current loss  
3. reduce cost  
4. reduce hysteresis loss

**68. The external characteristic of a shunt generator can be obtained directly from its – characteristic**

1. internal   2. open-circuit  
3. load-saturation   4. Performance

**69. Load saturation characteristic of a d.c. generator gives relation between**

1.  $V$  and  $I_a$    2.  $E$  and  $I_a$    3.  $E_0$  and  $I_f$    4.  $V$  and  $I_f$

**70. The voltage built-up process of a d.c. generator is**

1. difficult   2. delayed   3. cumulative   4. Infinite

**71. The biggest advantage of T-T connection over the V-V connection of 3-phase power transformation is that it provides.**

1. a set of balanced voltages under load  
2. a true 3-phase, 4-wire system  
3. a higher ratio of utilization  
4. more voltages

**72. U.H.F. band covers the range of**

1. 0-300 KHz   2. 3-30 MHz  
3. 300-3000 KHz   4. 300 MHz - 3 GHz

**73.The ripple factor of a bridge rectifier is**

- 1.0.48 2.0.812 3. 1.11 4. 1.21

**74. The higher level language is/are**

1. Machine language 2.BASIC 3.Assembly language 4. PASCAL

**75. The high level language can be translated into machine language with the help of**

1. Assembler 2. Stack pointer  
3. Compiler 4. Multiplexer

**76.In the emitter characteristic of UJT, the negative resistance portion.**

- 1.lies in the cut-off region  
2.continues up to peak point  
3.lasts until the valley point is reached  
4.does not exist

**77. After firing as SCR, the gating pulse is removed. The current in the SCR will**

1. remain the same 2. immediately fall to zero 3. rise up 4. None

**78.When reverse bias is applied to a junction diode, it**

- 1.increases the potential barrier  
2.decreases the potential barrier  
3.greatly increases the minority carrier current  
4.greatly increases the majority carrier current

**79.Transformer cores are laminated in order to**

- 1.simplify its construction  
2.minimise eddy current loss  
3.reduce cost  
4.reduce hysteresis loss

**80. When a P - N junction is forward biased**

- 1.only electrons in N-region are injected into P-region  
2.only holes in P-region are injected into N-region  
3.majority carriers in each region are injected into the other region  
4.minority current is reduced to zero

### **Answers**

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												1.4	2.2,4	3.2	4.4
5.1	6.4	7.3	8.1,3	9.1	10.2	11.4	12.3	13.4	14.1	15.3	16.2	17.4	18.1	19.1	20.2
21.2	22.1	23.4	24.1	25.1	26.3	27.1	28.3	29.1	30.4	31.2	32.4	33.3	34.2	35.1	36.4
37.4	38.4	39.3	40.4	41.4	42.3	43.4	44.2	45.4	46.1	47.2	48.4	49.2	50.3	51.3	52.4
53.4	54.4	55.4	56.1	57.2	58.3	59.2	60.2	61.4	62.3	63.2	64.4	65.3	66.2	67.2	68.2
69.4	70.3	71.2	72.4	73.1	74.2,4	75.3	76.3	77.1	78.1	79.2	80.3				

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