QB365 Question Bank Software Study Materials

Electronics and Communication 50 Important 1 Marks Questions With Answers (Book Back and Creative)

12th Standard

Physics

Total Marks : 50

Multiple Choice Question

50 x 1 = 50

1) The barrier potential of a silicon diode is approximately, _____.

(a) 0.7 V (b) 0.3 V (c) 2.0 V (d) 2.2 V

2) If a small amount of antimony (Sb) is added to germanium crystal,_____.

(a) it becomes a p-type semiconductor (b) the antimony becomes an acceptor atom

(c) there will be more free electrons than hole in the semiconductor (d) its resistance is increased

3) If a positive half-wave rectified voltage is fed to a load resistor, for which part of a cycle there will be current flow through the load?

(a) 0^0–90^0 (b) 90^0–180^0 **(c) 0^0–180^0** (d) 0^0–360^0

4) The zener diode is primarily used as _____.

(a) Rectifier (b) Amplifier (c) Oscillator **(d) Voltage regulator**

5) The principle based on which a solar cell operates is_____.

(a) Diffusion (b) Recombination **(c) Photovoltaic action** (d) Carrier flow

6) The light emitted in an LED is due to _____.

(a) Recombination of charge carriers (b) Reflection of light due to lens action

(c) Amplification of light falling at the junction (d) Large current capacity

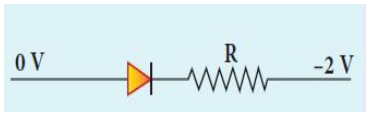
7) To obtain sustained oscillation in an oscillator,_____.

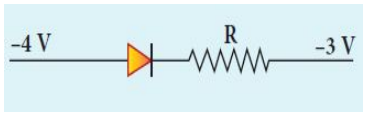
(a) Feedback should be positive (b) Feedback factor must be unity (c) Phase shift must be 0 or 2π **(d) All the above**

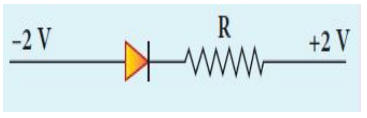
8) If the input to the NOT gate is A = 1011, its output is _____.

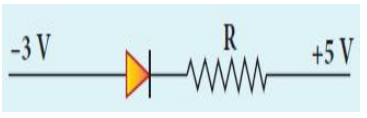
(a) 0100 (b) 1000 (c) 1100 (d) 0011

9) Which one of the following represents forward bias diode?

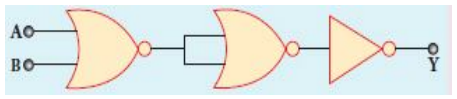
(a) 

(b) 

(c) 

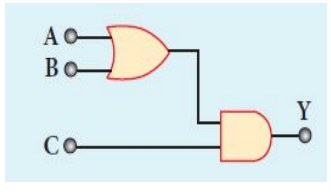
(d) 

10) The given electrical network is equivalent to _____.



(a) AND gate (b) OR gate **(c) NOR gate** (d) NOT gate

11) The output of the following circuit is 1 when the input ABC is_____.



(a) 101 (b) 100 (c) 110 (d) 010

12) The variation of frequency of carrier wave with respect to the amplitude of the modulating signal is called _____.

(a) Amplitude modulation **(b) Frequency modulation** (c) Phase modulation (d) Pulse width modulation

13) The frequency range of 3 MHz to 30 MHz is used for _____.

(a) Ground wave propagation (b) Space wave propagation **(c) Sky wave propagation** (d) Satellite communication

14) The barrier potential of a p-n junction depends on
i) type of semiconductor material
ii) amount of doping
iii) temperature. Which one of the following is correct?

(a) (i) and (ii) only (b) (ii) only (c) (ii) and (iii) only **(d) (i) (ii) and (iii)**

15) In an unbiased p-n junction, the majority charge carriers (that is, holes) in the p-region diffuse into n-region because of _____.

(a) the potential difference across the p-n junction (b) the higher hole concentration in p-region than that in n-region
(c) the attraction of free electrons of n-region
(d) the higher concentration of electrons in the n-region than that in the p-region

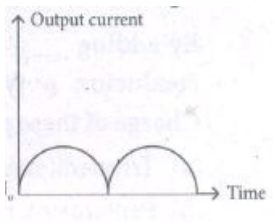
16) The specific characteristic of a common emitter amplifier is _____.

(a) High input resistance (b) Low power gain **(c) Signal phase reversal** (d) Low current gain

17) Which statement is incorrect regarding for p-n junction?

(a) Donor atoms are depleted of their holes in junction (b) No net charge exists far from junction
(c) Barrier potential V_B is generated **(d) Energy V_B is to be surrounted before any charge can flow across junction**

18) The output current versus time curve of a rectifier is shown in the figure. The average value of the output current is _____.



(a) 0 (b) $\frac{I_0}{2}$ **(c)** $\frac{2I_0}{\pi}$ (d) I_o

19) In an N-P-N transistor circuit, the emitter, collector, and base current are respectively I_E, I_C, and I_B. The relation between them is _____.

(a) I_C EB **(b) I_B CE** (c) $I_B > I_C > I_E$ (d) $I_B > I_C > I_E$

20) The forbidden energy band gap in semi conductor, conductor and insulator are E_1, E_2 and E_3 respectively. The relation among them is _____.

(a) $E_1 < E_2 > E_3$ (b) $E_1 > E_2 > E_3$ (c) $E_1 < E_2 < E_3$ **(d) $E_1 > E_2 < E_3$**

21) A light emitting diode has a voltage drop of 2v across it when 10 mA current is passed. If this LED is to be operated with 6v battery the value of limiting resistor would be _____

(a) 400 Ω (b) 4000 Ω (c) 40 k Ω (d) 300 Ω

22) The frequency of output signal of LC oscillator circuit is 100 Hz with capacitance value 0.1μF. IF value of capacitance is taken as 0.2 μF, the frequency of output signal _____.

(a) decreases by $\frac{1}{\sqrt{2}}$ (b) increases by $\frac{1}{\sqrt{2}}$ (c) decreases by $\frac{1}{2}$ (d) increases by $\frac{1}{2}$

23) The input resistance is _____

(a) 1k Ω (b) 10 Ω (c) 10 k Ω (d) 100 Ω

24) A common - emitter amplifier has a voltage gain of 100, an input impendence of 100Ω and an output impedence of 200 Ω. The product of voltage gain and current gain is _____

(a) 1000 (b) 3000 **(c) 5000** (d) 500

25) The device which is a combination of a receiver and a transmitter is _____.

(a) Amplifier **(b) Repeater** (c) Transducer (d) Modulator

26) The radio waves of frequency 30 MHz to 300 MHz belong to _____.

(a) high frequency band **(b) very high frequency band** (c) ultra high frequency band (d) super high frequency band

27) In frequency modulation _____.

(a) the amplitude of modulated wave varies as frequency

(b) the frequency of modulated wave varies as amplitute the frequency

(c) the amplitude of modulated wave varies as amplitute of carrier wave

(d) the frequency of modulated wave varies as frequency of modulating wave

28) When NPN transistor is used as an amplifier then _____

(a) electron moves from base to collector (b) hole travels from emitter to base **(c) hole goes to emitter from base**

(d) electron goes to base from collector

29) Long distance radio communication employs _____ wave propagation.

(a) ground **(b) sky** (c) space (d) surface

30) After the angle of refraction becomes 90^o at the ionosphere, the wave travels _____.

(a) faster (b) through space (c) in a straight line **(d) towards the earth**

31) The audio frequency range is _____.

(a) 20 Hz to 200 Hz (b) 20 Hz to 2000 Hz (c) 20 Hz to 200,000 Hz **(d) 20 Hz to 20,000 Hz**

32) In AM, the amplitude of the carrier wave is changed in accordance with that of the _____ of the signal wave.

(a) frequency **(b) intensity** (c) phase (d) time

33) For effective modulation, the degree of modulation should never exceed _____ %.

(a) 10 (b) 50 **(c) 100** (d) 90

34) The device which converts electrical energy into light energy _____.

(a) photo diode **(b) LED** (c) Transistor (d) Photocell

35) In FM, the _____ of carrier wave is changed in accordance with the intensity of the signal.

(a) amplitude **(b) frequency** (c) time of transmit (d) phase

36) The frequency of a FM transmitter without signal input is called _____ frequency.

(a) resting (b) maximum (c) signal (d) final

37) The change in the resting frequency of a FM transmitter is called _____

(a) frequency swing **(b) frequency deviation** (c) range offrequency (d) centre deviation

38) The ability to select a particular wanted signal only and rejecting the unwanted signals is called _____.

(a) sensitivity (b) buffer action (c) reception **(d) selectivity**

39) How many AND gates are required to form NAND gate?

(a) 1 (b) 2 (c) 3 (d) 4

40) Partially filled outermost level is called _____

(a) valence level (b) core level (c) ground level (d) conduction level

41) In most television sets, the scanning frequency is _____per second.

(a) 250 **(b) 25** (c) 2 (d) 5

42) The echo signal of a RADAR is demodulated by a _____.

(a) decoder (b) transmitter **(c) superhet receiver** (d) rectifier

43) In AM receiver, if 900 kHz station is tuned, then the local oscillator will have to produce a frequency of _____.

(a) 600 kHz (b) 455 kHz (c) 10.7 MHz **(d) 1355 kHz**

44) For p-n junction, which statement is incorrect?

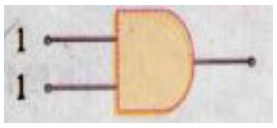
(a) Donor atoms are depleted of their holes in junction (b) No net charge exists far from junction

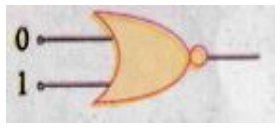
(c) Barrier potential V_B is generated **(d) Energy V_B is to be surmounted before any charge flow across junction**

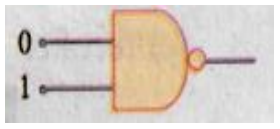
45) A NPN transistor conducts when collector is _____ and emitter is _____ with respect to base.

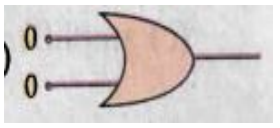
(a) positive, negative **(b) positive, positive** (c) negative, negative (d) negative, positive

46) Which of the following logic gate will have output 1?

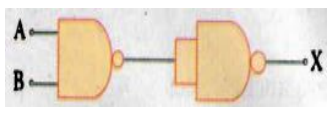
(a) 

(b) 

(c) 

(d) 

47) The output (X) of the logic circuit shown in figure will be _____.



(a) $X = \overline{A} \cdot \overline{B}$ (b) $X = \overline{AB}$ **(c)** $X = A.B$ (d) $X = \overline{A + B}$

48) Audio frequency range is _____.

(a) 200 Hz-2000 Hz **(b) 20 Hz - 2kHz** (c) 20kHz - 20000kHz (d) 200Hz - 200kHz

49) The frequency range of 30MHz to 400GHz is used for _____.

(a) Satellite communication (b) Ground wave propagation **(c) Space wave propagation** (d) Sky wave propagation

50) In satellite communication system the uplink and downlink frequency bands are respectively, _____.

(a) 6GHz, 4 GHz (b) 12 GHz, 6GHz (c) 4GHz, 6GHz (d) 6GHz, 12GHz