UNIT-2

Q-1 ⇒ When an PNP transistor is saturated its V_{CE}

(a) I_B is zero and I_C is zero (b) is low and I_C is high.

(c) Equal to V_{CC} and I_C is zero (d) Equal to V_{CC} and I_C is high

Q-2 If, in a bipolar junction transistor, $I_B = 100\,\mu A$ and $I_C = 10\,mA$ in what range does the value of its beta lie.

(a) 0.1 to 1.0 (b) 1.01 to 10

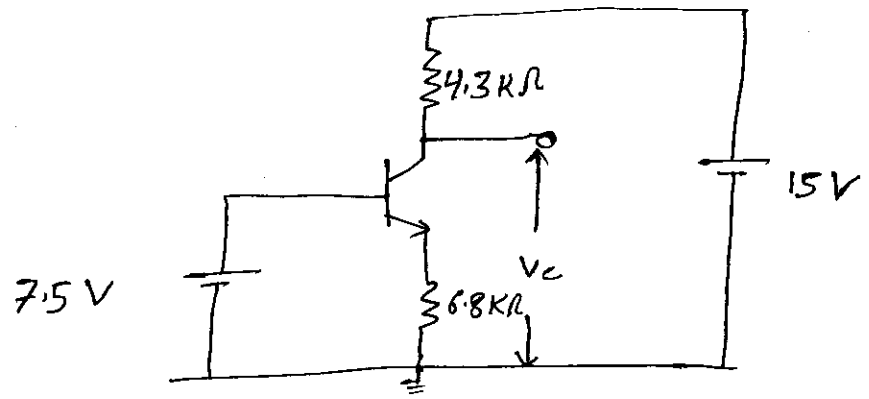
(c) 10.1 to 100 (d) 100.1 to 1000

Q-3 The value of total collector current in a CB circuit is

(a) $I_C = \alpha I_E$ (b) $I_C = \alpha I_E + I_{CO}$

(c) $I_C = \alpha I_E - I_{CO}$ (d) $I_C = \beta I_E$

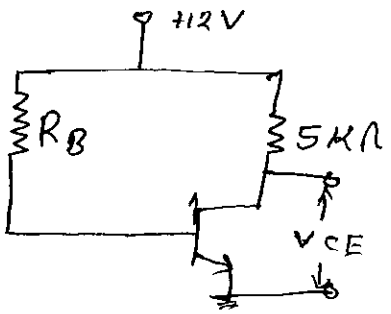
Q-4 The nearest value of V_C in the circuit shown below will be (consider β high)



(a) 4 V (b) 6.8 V

(c) 8.7 V (d) 10.7 V

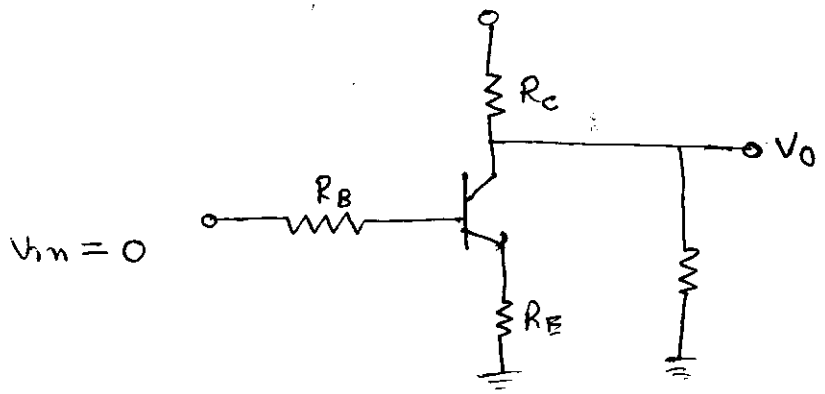
Q-5 Consider $V_{BE} = .7V$ and $\beta = 50$ for the transistor in the circuit shown below, for $V_{CE} = 2V$, the value of R_B is



(a) 200KΩ (b) 242KΩ

(c) 283KΩ (d) 300KΩ

Q-6 For the circuit shown below if $R_B = R_C = 1\,K\Omega$, then the value of V_0 will be.



(a) 4.55V (b) 2.5V

(c) 1V (d) zero.

Q-7 The dc load line of a transistor circuit

(a) Has a Negative slope (b) Is a curved line

(c) Gives graphic relation between I_C & I_B

(d) Does not contains the Q-point.

Q-8 → The positive swing of the output signal in a transistor circuit starts clipping first when Q-point of the circuit moves

(a) To the centre of the load line.

(b) Two-third way up the load line.

(c) Towards the saturation point.

(d) Towards the cut-off point.

Q-9. For a transistor amplifier with self-biasing network, the following components are used: $R_1 = 4K\Omega$, $R_2 = 4K\Omega$ and $R_E = 1K\Omega$ the approximate value of the stability factor 'S' will be

(a) 4 (b) 3

(c) 2 (d) 1.5

Q-10 → The emitter resistor R_E is bypassed by a capacitor C_E so as to improve the stability of Q point. (True / False)

Q-11 To obtain distortionless output, the Q-point in a voltage amplifier is selected in the middle of the active region (True / False)

Q-12 ⇒ The BJT is employed as an amplifier, it operates

(a) In cut-off (b) In saturation

(c) Into active region (d) reverse saturation

Q-13 - A FET is essentially a

(a) current driven device (b) voltage driven device

(c) Power driven device (d) None of these

Q-14 - A JFET has three terminals, namely ....

(a) Cathode, anode, grid (b) emitter, base, collector

(c) source, gate, drain (d) none of these

Q-15 - A JFET is also called .... transistor.

(a) unipolar (b) Bipolar

(c) Unijunction (d) None of these

Q-16 - A MOSFET can be operated with ...

(a) Negative Gate voltage only

(b) Positive Gate voltage only

(c) Positive as well as negative Gate voltage.

(d) None of these.

Q-17 A JFET has high input impedance because

(a) It is made of semiconductor material

(b) input is reverse biased

(c) of impurity atoms

(d) None of the above.

Q-18- which of the following devices has the highest input impedance?

(a) JFET (b) MOSFET

(c) Crystal diode (d) ordinary transistor

Q-19- The drain current I_D in a JFET is given by

(a) $I_D = I_{DSS}\left(1 - \frac{V_{GS}}{V_P}\right)^2$ (b) $I_D = I_{DSS}\left(1 + \frac{V_{GS}}{V_P}\right)^2$

(c) $I_D = I_{DSS}\left(1 - \frac{V_P}{V_{GS}}\right)^2$ (d) $I_D = I_{DSS}\left(1 + \frac{V_P}{V_{GS}}\right)^2$

Q-20- For $V_{GS} = 0V$, the drain current becomes constant when V_{DS} exceeds - - - .

(a) cut off (b) V_{DD}

(c) V_P (d) 0V

Q-21. An ideal op-amp has

(a) Infine A_V (b) Infine R_i

(c) Zero R_O (d) All the above

Q-22 → The gain of actual op-amp is assumed

(a) 1×10^6 (b) 1×10^4

(c) 1×10^3 (d) 100

Q-23- An inverting amplifier has $R_f = 2M$ and $R_1 = 1K\Omega$, the closed loop gain is

(a) -2000 (b) 2000

(c) -2001 (d) 2001

Q-24 - In binary numbers, shifting the binary point one place to the right.

(a) Multiplies by 2 (b) Divides by 2

(c) Decrease by 10 (d) Increament by 10

Q-25- the 2's complement of 1000_2 is

(a) 0111 (b) 0101

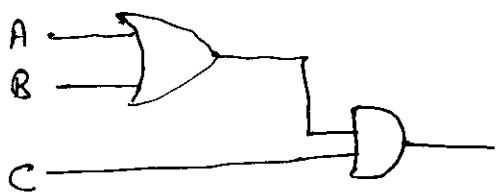
(c) 1000 (d) 0001

Q-26 A XOR gate produces an output only when its two inputs are

(a) High (b) low

(c) different (d) same

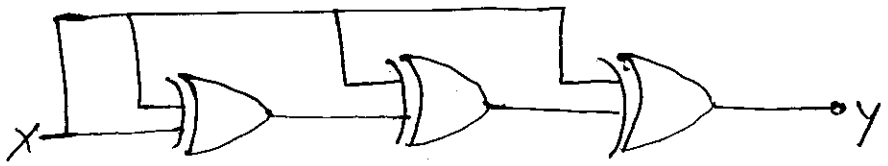
Q-27 - To get an output 1 from circuit shown below the input ABC must be



(a) 010 (b) 100

(c) 101 (d) 110

Q-28 - The output y of the circuit is given as



(a) 1 (b) Zero

(c) X (d) $\bar{X}$

Q-29 - According to boolean algebra (A + AB) equal to

(a) A (b) B

(c) AB (d) 1

Q-30 - A K- map of n- variables contains cells

(a) n (b) n+1

(c) 2^n (d) 2^{n-1}

Q-31 - The dual of the statement (A+1) = 1 is

(a) $A \cdot 1 = A$ (b) $A \cdot 0 = 0$

(c) $A + A = A$ (d) $A \cdot A = 1$