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**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

**GATE QUESTION – BATCH 2**

Branch : ECE Subject : Analog Electronic

Year/Sem : II/ III Subject code : 1151EC103

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| 1 | The oscillator circuit shown in the figure is    a. Hartley oscillator with foscillation = 79.6 MHz  b. Colpitts oscillator with foscillation = 50.3 MHz  c. Hartley oscillator with foscillation = 159.2 MHz  d. Colpitts oscillator with foscillation = 159.2 MHz | GATE - 2001  (CO3) |
| 2 | The current gain of a BJT is  a. gm ro  b. gm/r0  c. gmrπ  d. gm/rπ | GATE - 2001  (CO3) |
| 3 | Consider the following two statements:  Statement 1:  A stable multivibrator can be used for generating square wave.  Statement 2:  Bistable multivibrator can be used for storing binary information.  a. Only statement 1 is correct  b. Only statement 2 is correct  c. Both the statements 1 and 2 are correct  d. Both the statements 1 and 2 are incorrect | GATE - 2001  (CO5) |
| 4 | In the amplifier circuit shown in the figure, the values of R1 and R2 are such that the transistor is operating at VCE = 3V and IC = 1.5mA when its β is 150. for a transistor with β of 200, the operating point (VCE, IC) is    a. (2V, 2mA)  b. (3V, 2mA)  c. (4V, 2mA)  d. (4V, 1mA) | GATE - 2002(CO1) |
| 5 | Assuming VCEsat= 0.2V and β = 50, the minimum base current (IB) required to drive the transistor in the figure to saturation is    a. 56 μA  b.140 mA  c. 60 mA  d. 3 mA | GATE – 2002 (CO1) |
| 6 | In a negative feedback amplifier using voltage series (i.e. voltage smapling, series mixing) feedback  a. Ri decreases and R0 decreases  b. Ri decreases and R0 increases  c. Ri increases and R0 decreases  d. Ri increases and R0 increases  (Ri and R0 denote the input and output resistance respectively) | GATE - 2002  (CO3) |
| 7 | An amplifier without feedback has a voltage gain of 50, input resistance of 1KΩ and output resistance of 2.5 KΩ. The input resistance of the current-shunt negative feedback amplifier using the above amplifier with a feedback factor of 0.2 is  a. 1/11KΩ  b. 1/5 KΩ  c. 5 KΩ  d. 11K Ω | GATE - 2003  (CO3) |
| 8 | Assume that the *b* of transistor is extremely large and *VBE* = 0.7*V*, *IC*  and *VCE* in the circuit shown in the figure | GATE – 2004  (CO1) |
| 9 | Voltage series feedback (also called series-shunt feedback) results in  a. increase in both input and output impedances  b. decrease in both input and output impedances  c. increase in input impedance and decrease in output impedance  d. decrease in input impedance and increase in output impedance | GATE – 2002 (CO3) |