**Reg. No. :** | | | | | | | | | | |

# Question Paper Code: 41434

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Third Semester

Electronicsand Communication Engineering

14UEC304 - ELECTRONIC CIRCUITS

(Regulation 2014)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. What happens to $I_{co}$ for every $10^oC$ rise in temperature?

   (a) doubles (b) remains same (c) reduces (d) triples

2. The disadvantage of voltage divider bias is that it has

   (a) high stability factor (b) low base current
   (c) many resistors (d) none of these

3. If the differential voltage gain and common mode voltage gain of a differential amplifier are 48*dB* and 2*dB* respectively, then common mode rejection ratio is

   (a) 24*dB* (b) 25*dB* (c) 46*dB* (d) 50*dB*

4. Which type of amplifier has moderate input and output impedance?

   (a) CE (b) CB (c) CC (d) None

5. The upper or lower cut off frequency is also called _____frequency

   (a) resonant (b) sideband (c) 3 db (d) None

6. Write the relation between $rbb^1$, $rb^1e$ and $h_{ie}$

   (a) $rbb^1 = h_{ie} - rb^1e$ (b) $rbb^1 = rb^1e$ (c) $rbb^1 = h_{ie}$ (d) $rbb^1 = h_{ie} + rb^1e$

7. The maximum efficiency of resistance loaded class A power amplifier is

   (a) 78.5% (b) 50% (c) 30% (d) 25%

8. What is the efficiency of class D amplifier?

(a)50% (b) 60% (c) 100% (d) 25%

9. A tuned amplifier uses _____ load.

(a) resistive (b) capacitive (c) LC tank (d) inductive

10. What happened to noise with negative feedback?

(a) increases (b) decreases
(c) no change (d) increases then decreases

PART - B (5 x 2 = 10 Marks)

11. What is transistor biasing?

12. Compare the characteristics of CC and CE amplifier.

13. Write the reason for drop in gain at low and high frequency.

14. How are amplifiers are classified based on the biasing condition?

15. List out the applications of tuned amplifier.

PART - C (5 x 16 = 80 Marks)

16. (a) How will you provide the bias compensation for the variations in current and discuss in detail. (16)

Or

(b) Briefly explain the various methods of MOSFET biasing. (16)

17. (a) Explain in details of AC equivalent circuit of a CB amplifier using h-parameter model and $r_e$ model and derive the equation for input impedance, output impedance, voltage gain and current gain. (16)

Or

(b) Briefly explain the differential amplifier, also derive CMRR. (16)

18. (a) Briefly explain the effect of bypass capacitor and coupling capacitor on the frequency response of amplifiers. (16)

Or

(b) Explain and derive the low frequency response of BJT amplifier. (16)

19. (a) Briefly explain complementary push pull Class-B amplifier, also derive its efficiency. (16)

Or

(b) Discuss and explain the methods of evaluating second and total harmonic distortion. (16)

20. (a) Explain the working of large signal tuned amplifier with input and output waveforms. (16)

Or

(b) Explain class-C tuned amplifier and derive its efficiency. (16)

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