C

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. The component used for compensation in a biasing circuit is   CO1- R

   (a) Inductor   (b) Thermistor   (c) Diode   (d) Both b & c

2. In a JFET, the amplification factor is μ and trans conductance g_m and   CO2- R
   Dynamic resistance is r_d are related as

   (a) $\mu=g_m r_d$ (b) $\mu=g_m r_d^2$ (c) $\mu=g_m/r_d$ (d) $\mu=r_d/g_m$

3. The bandwidth in hertz of an amplifier with rise time t_r in seconds can   CO3- R
   be estimated as

   (a) $BW=0.45/t_r$ (b) $BW=0.35/t_r$ (c) $BW=0.55/t_r$ (d) $BW=0.65/t_r$

4. The maximum theoretical efficiency for class B power amplifier is   CO4- R

   (a) 36.2%   (b) 78.5%   (c) 60%   (d) 43.5%

5. The overall performance of an amplifier can be improved by   CO5- R

   (a) Using positive feedback   (b) Increasing the input voltage

   (c) Removing the feedback   (d) Using negative feedback

PART – B (5 x 3= 15 Marks)

6. Why temperature compensation is required.   CO1- U

7. Why the common collector amplifier is used for impedance matching?   CO2- U

8. Define bandwidth of an amplifier?   CO3- R

9. Define conversion efficiency of a power amplifier   CO4- R

10. List the advantages of negative feedback amplifier   CO5- R

11. (a) Explain about the biasing stability of BJT with self bias or voltage divider bias method.   CO1- U   (16)

Or

(b) Explain about the different types of FET biasing in detail.   CO1- U   (16)

12. (a) Discuss about the voltage gain, current gain ,input impedance and output impedance for CE configuration mid based region.   CO2- Ana   (16)

Or

(b) Discuss about the methods of increasing input impedance using Darlington connection and Boot strapping.   CO2- Ana   (16)

13. (a) (i) Discuss the frequency response characteristics of RC coupled amplifier.   CO3- U   (8)

(ii) Sketch the hybrid π model of the transistor and explain each parameter in the model.   CO3- U   (8)

Or

(b) Draw the circuit diagram, of a multistage CE amplifier and obtain the frequency response of the circuit.   CO3- U   (16)

14. (a) Explain with neat circuit diagram the working of a transformer coupled class A Power amplifier and give its advantages and disadvantages.   CO4- U   (16)

Or

(b) Explain the working of complimentary symmetry class B push pull power amplifier ,what are its merits ,demerits and applications.   CO4- U   (16)

15. (a) (i) Give the block diagram of feedback amplifier and discuss the effect of negative feedback with respect to closed loop gain, band width and distortion.   CO5- U   (12)

(ii) Explain Nyquist criterion to analyze the stability of feedback amplifiers.   CO5- U   (4)

Or

(b) (i) Explain single tuned voltage amplifier and discuss its frequency response.   CO5- U   (8)

(ii) Compare the different types of feedback in detail.   CO5- U   (8)

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