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Question Paper Code : 53404

B.E./B.Tech. DEGREE EXAMINATION, DEC 2020

Third Semester

Electronics and Communication Engineering

15UEC304-ELECTRONIC CIRCUITS

(Regulation 2015)

Duration: 1.15 hrs Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

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

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

2. When a BJT is used as an amplifier, it operates in CO1- R

   (a) Active region (b) Cutoff region (c) Saturation region (d) All the above

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

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

4. The darlington pair consists of the following two stages CO2- App

   (a) CE and CC (b) Both CE (c) both CC (d) CE and CB

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

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

6. The cutoff frequency that occurs when the common emitter current gain value drops to 0.707 of its low frequency value is called as CO3- U

   (a) Alpha frequency (b) Beta frequency (c) Gamma frequency (d) Bandwidth

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

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

8. Class AB operation is often used in power amplifiers in order to CO4-R

(a) Get maximum efficiency (b) remove even harmonics

(c) Overcome cross-over distortion (d) reduce collector dissipation

9. 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

10. In a Common emitter amplifier, the un-bypassed emitter resistor provides CO5- R

(a) voltage-shunt feedback (b) current-series feedback

(c) negative-voltage feedback (d) positive-current feedback

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Explain about the biasing stability of BJT with self bias or voltage divider bias method. CO1- U (8)

12. Discuss about the voltage gain, current gain ,input impedance and output impedance for CE configuration mid based region. CO2- Ana (8)

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

14. Explain with neat circuit diagram the working of a transformer coupled class A Power amplifier and give its advantages and disadvantages. CO4- U (8)

15. 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 (8)