

**End Semester Examinations - 2015-16 Even Semester - May 2016**

**14EC2006 Electronic Circuits**

**Set B**

**Time : 3 hrs**  
**Total Marks: 100**

1. Explain the working principle of Full wave rectifier and derive its rectifier efficiency, ripple factor, Peak Inverse voltage, Voltage regulation .Also discuss the merits and demerits of the circuit. (20)  

**OR**
2. A. How ripples are removed in Half wave rectifier with the help of inductor and capacitors? (10)  
B. What is the need for voltage regulator in dc power supply? Also explain the short circuit and overload protection circuit. (10)
3. A. Explain the voltage divider biasing for FET and show the mathematical approach for calculating the drain current. (15)  
B. For the fixed bias circuit shown determine (i) collector current (ii) collector resistance  
(iii) base resistance. Assume  $\beta = 80$ ,  $V_{BE} = 0.7V$ ,  $V_{CC} = 12V$ ,  $I_B = 40\mu A$  and  $V_{CE} = 6V$ . (5)  

**OR**
4. Describe the BJT voltage divider method of biasing with diagram. How stabilization of operating point is achieved by this method?.Also discuss the stability factor of the circuit. (20)
5. What is the advantage of multistage amplifiers? With neat sketch explain the operation of transformer coupled amplifier and discuss the advantages, applications and limitations of the circuit. (20)  

**OR**
6. Explain the working of a series-fed and tranformer coupled class A power amplifier and discuss its power efficiency, power dissipation capability and distortion. (20)
7. A. For voltage shunt negative feedback connection, explain the following parameters: gain, input impedance, output impedance, noise, distortion and bandwidth. (16)  
B. The voltage gain of an amplifier without feedback is 2000. Calculate the voltage gain of the amplifier if negative voltage feedback is introduced in the circuit. Given that Feedback fraction is 0.001. (4)  

**OR**
8. A. For current series negative feedback connection, explain the following parameters: gain, input impedance, output impedance, noise, distortion and bandwidth. (16)  
B. Calculate the output impedance of current shunt feedback amplifier with the following specifications.  $A = 80$ ,  $\beta = 0.001$  and output impedance of the amplifier without feedback = 20 ohms. (4)
9. A. Define CMRR and explain the different modes of operation of Differential amplifier. (5)  
B. With neat sketch explain the operation of single tuned amplifier and draw the frequency response. Mention the applications and advantages of the circuit. (15)

**Wishing you All the Best**