

B.Tech. (AEIE) 4th Semester (F. Scheme)

Examination, May-2015

ANALOG ELECTRONICS

Paper-EE-202-F

Time allowed : 3 hours]

[Maximum marks : 100

*Note : Attempt five questions out of nine questions.
Question No. 1 is compulsory. Students have to
attempt one question from each of four sections.*

1. (a) Discuss in brief about role of diode as clamper.
- (b) Compare BJT with CMOS.
- (c) Draw and discuss frequency response of CE amplifier.
- (d) Give advantages of negative feedback. 5×4

Section-A

2. Derive an expression for rectification efficiency of a Full Wave Rectifier. What is ripple factor ? Show that ripple factor for a half wave and full wave rectifier is 1.21 and 0.482 respectively. 20
3. (a) Draw and explain V-I characteristics of p-n junction diode. 10
- (b) Discuss in brief about diode as
 - (i) Peak to Peak detector
 - (ii) Voltage Tripler 5,5

Section-B

4. (a) Discuss in brief about role of MOSFET as a
- (i) Switch
 - (ii) Amplifier 12
- (b) Define the following terms for MOSFET
- (i) Threshold voltage
 - (ii) Trans conductance 8
5. (a) Discuss various types of biasing used in MOSFET amplifiers. 14
- (b) Give construction of Depletion type MOSFET (P channel) 6

Section-C

6. What are the various methods of biasing a transistor ? Draw and explain circuit diagram for each of biasing method. 20
7. (a) Draw and discuss the input and output characteristics of npn transistor in Common Base Configuration. 10
- (b) Draw and discuss Output characteristics and Input characteristics of npn transistor in common emitter configuration. 10

Section-D

8. (a) Discuss the role of op. amp. as inverting amplifier. 10
- (b) Draw the circuit diagram for a differential amplifier with active load and explain its working. 10
9. Write short notes on : 6,7,7
- (i) Shunt Series feedback amplifier
- (ii) Large Signal operation of op. amp.
- (iii) Small signal operation of MOS differential pair.