

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Electronics & Communication Engineering) (Sem.-4)

ANALOG CIRCUITS

Subject Code : BTEC-401-18

M.Code : 77565

Date of Examination : 02-07-22

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- a. Define static and dynamic resistance of a PN junction diode.
- b. What is the use of coupling capacitor and bypass capacitor in an amplifier?
- c. What is DC load line?
- d. What is current shunt feedback?
- e. Explain transconductance amplifier.
- f. What is current gain and voltage gain of amplifier?
- g. What is thermal runaway?
- h. Explain the gain of cascaded configuration.
- i. What do you mean by harmonic distortions in power amplifiers?
- j. What is the difference between Class-B and Class-AB operations?

SECTION-B

2. Draw the circuit of various transistor configurations. List their important features. Why CE configuration is mainly used?
3. Can a negative feedback amplifier operate as an oscillator? If not, why?
4. Derive the expression for following parameters for a class B push-pull amplifier :
 - a. Q-point
 - b. DC input power
 - c. AC output power
 - d. Maximum Efficiency.
5. Explain the working of RC coupled amplifier with diagram.
6. Explain how will you determine the voltage gain of CE amplifier by plotting the DC load line on the output characteristics of the transistor.

SECTION-C

7. Explain the working, frequency response and applications of transformer coupled transistor amplifier.
8. Drive the power and efficiency calculations of class B power amplifier.
9. Write short note on the following :
 - a) RC phase shift oscillator.
 - b) Emitter Follower.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.