Roll No.	Total No. of Pages : 02
Total No. of Questions:07	
B.Sc. (Computer Science) (S ELECTRONICS Subject Code : BCS-50	Sem.–5) 4
M.Code : 72577	
Date of Examination : 19-1	2-22
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 SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

Write briefly : 1.

a)	What do you mean by sustained oscillations? Define Barkausen's Crietria.	(2)
b)	Explain thermal runaway. How can it be avoided?	(2)
c)	What do you mean by ideal diode? Draw its V-I characteristics.	(2)
d)	Define ideal and practical Voltage source.	(2)
e)	What do you mean by biasing of a transistor?	(2)
f)	What is the need of biasing	(2)
g)	Draw the pin diagram of IC 741 used as an operational amplifier.	(2)
h)	Define the terms modulation index and deviation ratio.	(2)
i)	Define Barkausen's Criteria. Also define feedback factor.	(2)
j)	Compare the performance of Half wave and full wave rectifiers.	(2)

SECTION-B

- 2. a) Draw and explain output characteristics of CE configuration.
 - b) In CE configuration if P=150, leakage current ICEO =100 μ A. If base current is 0.2mA, determine IC and IE. 5
- 3. a) Explain the working of N-channel E-MOSFET. Also draw the V-I characteristics. 5
 - b) What ordinary transistor is called Bipolar? Compare the different configurations of Transistor. 5
- 4. a) Explain the working of Collector to base bias circuit. Calculate the operating point.6
 - b) Explain the following:
 - (i) Efficiency
 - (ii) Ripple Factor
 - (iii) Relation between Current gain
 - (iv) Quiescent Point.
- 5. a) Derive the relation between the depth of modulation and output power of an AM transmitted wave. 5

4

- b) Draw the circuit of a CE transistor configuration and explain its h-parameter model.5
- a) An amplifier has a normal voltage gain of 50. Calculate the gain with feedback, if the negative feedback is 10% of the output. If the distortion without feedback was 10%, what would be distortion with feedback?
 - b) Explain the working of RC phase shift Oscillator. Also derive the expression for frequency of Oscillation. 7
- a) Describe how an op-amp can be used as inverting amplifier. Also define common mode rejection ratio, Slew rate & Offset voltage.
 - b) Briefly explain the circuit of TV receiver with its block diagram. 5

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

5