Enrollment No: _____ Exam Seat No:_____

C.U.SHAH UNIVERSITY
Summer Examination-2019

Subject Name :Electronics

Subject Code :4SC04PHE1 Branch : B.Sc. (All)

Semester : 4 Date : 03/05/2019 Time : 02:30 To 05:30 Marks : 70

Instructions:

(1) Use of Programmable calculator & any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

Q-1 **Attempt the following questions:** **(14)**

a) State applications of JFET. 01
b) Calculate 111001_2 into decimal number. 01
c) Define universal logic gates. Write their names. 01
d) What is FET? 01
e) Convert 32.88125_{10} into binary number. 01
f) Write full names of BJT and UJT. 01
g) Define stability factor. 01
h) Give advantages of UJT. 01
i) How can we differentiate analog and digital electronics? 01
j) How many terminals in JFET? Write their names. 01
k) Which number system is found more useful in digital electronics? 01
l) What is thermistor? 01
m) State advantage of transistor biasing. 01
n) Convert 256_2 into binary number. 01

Attempt any four questions from Q-2 to Q-8

Q-2 **Attempt all questions** **(14)**

a) What is transistor? How transistor biasing can be done through feedback resistor biasing method? 07
b) Discuss how base resistor biasing method are working for transistor biasing? Write its merits and demerits. 07

Q-3 **Attempt all questions** **(14)**

a) Define JFET. Write it briefly with its construction and working principle. 07
b) Explain phase reversal process in transistor amplifier in brief. 07

Q-4 **Attempt all questions** **(14)**

a) How UJT works as a relaxation oscillator? Explain it with its advantages. 07
b) What is MOSFET? Discuss working principle of MOSFET with neat and clean schematic diagram. 07

Q-5 **Attempt all questions** **(14)**

a) How JFET and BJT are differentiated with each other? Explain in brief. 07

b) Explain how transistor amplifier works practically. 07

Q-6 **Attempt all questions** **(14)**

a) Define logic gates. Write short notes on (1) AND gate and (2) NOT gate. 07

b) What is load line? How many types of it? Discuss briefly about the physical significance of load line in transistor amplifier circuit. 07

Q-7 **Attempt all questions** **(14)**

a) How many parameters are presented for JFET? Write each parameter briefly. 07

b) How AND, OR and NOT gate can be made through NAND universal gate? Discuss briefly. 07

Q-8 **Attempt all questions** **(14)**

a) Write about OR gate. 05

b) Write short note on thermistor characteristics. 05

c) For a given JFET, if a change in drain voltage of 8V produces a change in drain current of 0.09 mA. Calculate ac drain resistance. 04