

Enrollment No: _____

Exam Seat No: _____

C.U.SHAH UNIVERSITY

Summer Examination-2018

Subject Name: Electronics

Subject Code: 4SC04PHE1

Branch: B.Sc. (Chemistry)

Semester: 4

Date: 10/05/2018

Time: 10:30 To 1:30

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.
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Q-1	Attempt the following questions:	(14)
	a) Why is biasing in a transistor necessary?	1
	b) Give advantages of JFET.	1
	c) Write the full form of MOSFET.	1
	d) What are the applications of UJT?	1
	e) Define transconductance (g_{fs}) of JFET.	1
	f) Define stability factor of transistor.	1
	g) What is thermistor?	1
	h) Differentiate analog and digital signal.	1
	i) Define pinch-off voltage of JFET.	1
	j) Name the types of transistor biasing methods.	1
	k) Convert $(110001)_2$ into decimal number.	1
	l) Name the three basic logic gates.	1
	m) Why is NOR gate called a universal gate?	1
	n) How many terminals does a JFET have?	1

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

Q-2	Attempt all questions	(14)
	a) Explain the voltage divider biasing method used for transistor biasing.	7
	b) Explain the use of NAND gate as a universal gate.	7
Q-3	Attempt all questions	(14)
	a) Explain the principle, construction and working of JFET.	6
	b) Explain the working of AND Gate with its Boolean expression, circuit diagram and truth table.	5
	c) Give the differences between BJT and JFET.	3
Q-4	Attempt all questions	(14)
	a) Explain the principle, construction and working of MOSFET.	6
	b) Explain the working of OR Gate with its logic circuit diagram and truth table.	5
	c) Name the two types of transistor configuration. How are they different?	3
Q-5	Attempt all questions	(14)



	a)	Explain the concept of transistor being used as an amplifier.	7
	b)	Explain the output characteristics of JFET with suitable figures.	7
Q-6		Attempt all questions	(14)
	a)	Explain in detail JFET parameters.	5
	b)	Write a short note on NOT Gate.	5
	c)	For a given JFET, if a change in drain voltage of 2 volt produces a change in drain current of 0.02 mA. Calculate the a. c. drain resistance.	4
Q-7		Attempt all questions	(14)
	a)	Explain the base resistor biasing method. Mention its merits and demerits.	6
	b)	Explain in detail the phase reversal process in transistor amplifier.	6
	c)	Give the applications of Thermistors.	2
Q-8		Attempt all questions	(14)
	a)	Explain in detail feedback resistor biasing method of transistor.	7
	b)	Explain with suitable diagram, the construction and working of UJT. Also mention its advantages.	7

