

Enrollment No: \_\_\_\_\_ Exam Seat No: \_\_\_\_\_

# C.U.SHAH UNIVERSITY

## Summer Examination-2017

Subject Name: Solid State Electronics

Subject Code: 4SC06SEC1

Branch: B.Sc. (Physics)

Semester: 6

Date: 21/04/2017

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.
- 

<b>Q-1</b>	<b>Attempt the following questions:</b>	<b>(14)</b>
a)	Define Comparator	1
b)	Define Latching Current	1
c)	Mention any one application of clipper circuit	1
d)	Explain how a Diac works briefly.	1
e)	Name the different types of IC's based on their scale of integration	1
f)	Draw an Op-Amp symbolically and mention one of its uses.	1
g)	What do you mean by Gate triggering?	1
h)	Give two advantages of electronic circuits	1
i)	Define the term amplitude modulation	1
j)	Differentiate Astable and Monostable multivibrator diagrammatically.	1
k)	Draw the V-I characteristics of a Triac.	1
l)	What do you mean by holding current?	1
m)	What is bandwidth?	1
n)	Abbreviate SCR	1

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

<b>Q-2</b>	<b>Attempt all questions</b>	<b>(14)</b>
a	Explain switching action of a transistor in detail	6
b	What are multivibrators? Explain Bistable multivibrator in detail	8
<b>Q-3</b>	<b>Attempt all questions</b>	<b>(14)</b>
a	Give an account on differentiating circuits	7
b	Differentiate between positive, biased and combination clipper circuits	7
<b>Q-4</b>	<b>Attempt all questions</b>	<b>(14)</b>
a	Explain the principle and working of SCR	10
b	State the difference between V-I characteristics of Diac and Triac	4
<b>Q-5</b>	<b>Attempt all questions</b>	<b>(14)</b>
a	Explain light activated turn-off circuit using Diac and Triac	7



	b	Explain two transistor analogy of SCR	7
<b>Q-6</b>		<b>Attempt all questions</b>	<b>(14)</b>
	a	Explain the construction of monolithic IC's with suitable figures	7
	b	How an Op-Amp works in the inverting mode?	7
<b>Q-7</b>		<b>Attempt all questions</b>	<b>(14)</b>
	a	Explain communication system in detail	7
	b	Discuss advantages and disadvantages of integrated circuits	7
<b>Q-8</b>		<b>Attempt all questions</b>	<b>(14)</b>
	a	Explain Op-Amp as an Integrator in detail	6
	b	Explain working of amplitude demodulator diode detectors	8

