

Enrollment No: _____

Exam Seat No: _____

C.U.SHAH UNIVERSITY

Summer Examination-2019

Subject Name: Analog and Digital Electronics

Subject Code: 4SC04ADE1

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.
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Q-1	Attempt the following questions:	(14)
	a) Differentiate: Analog and Digital Signal	1
	b) What do you mean by stabilization in a transistor?	1
	c) Define the term Virtual Ground in Op Amp.	1
	d) List two advantages of JFET.	1
	e) Define Thermistor.	1
	f) What is an Op-Amp?	1
	g) Write the Commutative laws used in logic gates.	1
	h) What is CMRR in Op-AMP operation?	1
	i) List the names of the basic logic gates.	1
	j) Give full form of MOSFET and draw its symbol.	1
	k) Draw the diagram for Op Amp when it is used as an Integrator.	1
	l) Define pinch-off voltage.	1
	m) Give the truth table for NOR gate.	1
	n) Give two applications of Op-Amp	1

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

Q-2	Attempt all questions	(14)
	a) Discuss in detail transistor as an amplifier in CE configuration.	6
	b) Enumerate on the working and construction of MOSFET.	8
Q-3	Attempt all questions	(14)
	a) Explain in detail the terms Load Line and Operating Point in Transistor working.	8
	b) Write a note on construction and working of a JFET.	6
Q-4	Attempt all questions	(14)
	a) Describe the input and output characteristics of Common Base Transistor connection.	7
	b) Define Stability factor of a transistor, also derive the formula for the same.	7
Q-5	Attempt all questions	(14)
	a) Explain AND gate in detail	6



- Q-6**
- b) Discuss the characteristics of an Ideal Operational Amp **8**
- Attempt all questions** **(14)**
- a) Write a note on NAND as a Universal Gate. **6**
- b) Convert the following decimals to binary **8**
- (i) 15_{10}
- (ii) 0.3125_{10}
- Q-7** **Attempt all questions** **(14)**
- a) State and Prove De Morgan's Theorem used in Logic Gates. **7**
- b) Discuss in detail on Op Amp used as an Adder. **7**
- Q-8** **Attempt all questions** **(14)**
- a) Simplify the Boolean Expressions: **8**
- $Y = (A + B + C).(A + B)$
- $Y = AB + \overline{AC} + A\overline{B}C(AB + C)$
- b) Explain in detail Op Amp as an Inverting Amplifier. **6**

