

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-1/2 (NEW) EXAMINATION – WINTER 2017

Subject Code: 2110016

Date: 04/01/2018

Subject Name: Basic Electronics

Time: 10:30 AM TO 01:00 PM

Total Marks: 70

Instructions:

1. Question No. 1 is compulsory. Attempt any four out of remaining Six questions.
1. Make suitable assumptions wherever necessary.
2. Figures to the right indicate full marks.

- Q.1 (a) FILLED THE BLANKS WITH APPROPRIATE WORDS 07**
1. Just as differential Equation are used to represent systems with analog signals, _____ are used for systems with discrete or digital data.
 2. The existence of transients and associated oscillations are a characteristic of systems possesses _____.and that is subjected to disturbances.
 3. To minimize coupling from the inevitable sources, all exposed elements are usually enclosed with in _____, which offer low resistances paths to ground.
 4. Slew rate is a measure of _____ can change and it is given by _____, with reference to OP AMP.
 5. Most sequential blocks are of the kind known as _____, which can be _____ or _____ or _____.
 6. In order to measure the potential difference between two terminals or node of circuit, voltmeter is connected _____ these two points.
 7. Mathematically function is said to be linear if it satisfies two properties: _____ and _____.
- (b) STATE TRUE OR FALSE WITH PROPER JUSTIFICATION 07**
1. Materials through which charge flows readily are called insulators.
 2. Reciprocal of resistance is called as conductance.
 3. Node analysis is used KCL to formulate circuit equation.
 4. Ideal amplifier has infinite input Impedance and zero output Impedance.
 5. For JK flip flop, when both input are 1(one) state, output is Indeterminate state.
 6. Multiplexing system is one in which two or more signals are transmitted differently for the transmission channel.
 7. The transfer function is Independent of Input signal.
- Q.2 (a) Draw the various rules to reduce/modification of Block Diagram system. 03**
- (b) Enlist the practical properties of OP OMP. 04**
- (c) Explain Node and Mesh Analysis with Controlled Sources., with example. 07**
- Q.3 (a) Draw the Transformer Device with associated diagrams and calculation. 03**
- (b) Draw the block diagram of typical digital control system. Describe the function of each block. 04**
- Draw the diagram for elements of Antennas, and explain with associated
- (c) formulae and Equation. 07**
- Q.4 (a) Make comparison of various Analog Modulation systems, based on different criteria. 03**
- (b) Classify the various ADC ckts ,with sketches and formulae. 04**
- (c) Classify the control system by control action. Explain with suitable example. 07**

- Q.5** (a) Describe the process of sampling and quantization with mathematical formulation. **03**
- (b) Explain the SNR with associated waveforms and calculation. **04**
- (c) Draw and explain the WYE- DELTA transformation with mathematical formulation and example. **07**
- Q.6** (a) Draw the frequency bands of Electromagnetic spectrum and enlist the applications of each one for the same. **03**
- (b) Draw the block diagram of PCM, with associated waveforms and circuits. **04**
- (c) List the various application of OP AMP, with diagram and formulae. **07**
- Q.7** (a) Draw the typical FDM system with associated nomenclature. **03**
- (b) Draw the various and basic GATE name, Logic symbols and Truth table. **04**
- (c) Make comparison of Digital communication systems with relative formulae and statics. **07**
