



# Sanjay Ghodawat University, Kolhapur

2017-18

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017

FY BTech

FYT 108

Nov 2017

A DEC

School of Technology

Elements of Electronics Engineering

End Semester Examination (ESE)

Semester I

Max Marks: 100

Time: 3 Hrs

Instructions for Students: 1) Use of calculator is **not** allowed  
2) All questions are compulsory

| Q1 | Solve any two  | Marks | COs |
|----|--|-------|-----|
|    |  |       |     |
| a) | With the help of neat diagram and waveforms explain the working of Full Wave Rectifier with bridge configuration                       | 09    | CO1 |
| b) | Compare Zener diode and p-n junction diode?  | 09    | CO1 |
| c) | With the help of neat circuit diagram explain I-V characteristics of zener diode? Explain its application as voltage regulator         | 09    | CO1 |
| Q2 |  |       |     |
| a) | Explain Transistor as a switch?  | 04    | CO2 |
| b) | With the help of neat circuit diagram and input-output characteristics, explain the working of BJT (NPN) common emitter configuration? | 12    | CO2 |
| OR |  |       |     |
| b) | With the help of neat circuit diagram, symbol & I-V characteristics, explain the working of Depletion type N-MOS                       | 12    | CO2 |
| Q3 |  |       |     |
| a) | Why NAND & NOR gates are called as universal gates?  | 04    | CO3 |
| b) | Convert the following numbers  | 12    | CO3 |
|    | a) $(1101)_{\text{gray}} \rightarrow (y)_2$  |       |     |
|    | b) $(10111.1010)_2 \rightarrow (y)_8$  |       |     |
|    | c) $(625.25)_{10} \rightarrow (y)_2$   |       |     |
|    | d) $(1011)_2 \rightarrow (y)_{10}$   |       |     |
|    | e) $(716.12)_8 \rightarrow (y)_2$  |       |     |
|    | f) $(AC.F9)_{16} \rightarrow (y)_2$  |       |     |
| Q4 |  |       |     |
|    | Solve any two  | Marks | COs |
| a) | With the help of block diagram, explain the working of op-amp in details   | 09    | CO4 |
| b) | With the help of neat circuit diagram, derivation and waveform, explain the working of op-amp as a differentiator?                     | 09    | CO4 |
| c) | With the help of neat circuit diagram, derivation and waveform, explain the working of op-amp as a summing amplifier?                  | 09    | CO4 |

**Q5** Solve any **two**

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|----|---|----|-----|
| a) | Write short note on satellite communication?  | 04 | CO5 |
| b) | With the help of neat block diagram, explain the construction and the working of FM Transmitter and FM Receiver | 12 | CO5 |

**OR**

- |    |   |    |     |
|----|---|----|-----|
| b) | With the help of neat block diagram, explain the construction and the working of AM Transmitter and AM Receiver | 12 | CO5 |
|----|---|----|-----|

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|-----------|----|--|----|-----|
| <b>Q6</b> | a) | Differentiate between CRO & DSO  | 04 | CO6 |
|           | b) | With the help of neat block diagram, explain the working of CRO, state its applications. | 12 | CO6 |

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