CBCS SCHEME

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BESCK104C/ BESCKC104

# First Semester B.E/B.Tech. Degree Supplementary Examination, June/July 2024
## Introduction to Electronics and Communication

Time: 3 hrs. Max. Marks:100

**Note:** *1. Answer any FIVE full questions, choosing ONE full question from each module.*
*2. M : Marks , L: Bloom's level , C: Course outcomes.*

| | | Module – 1 | M | L | C |
|---|---|---|---|---|---|
| 1 | a. | Describe full wave bridge rectifier with relevant waveform? Memorize its measurable parameters. | 7 | L2 | CO1 |
| | b. | Explain how zener diode acts as voltage regulator. Discuss line and load regulation. | 7 | L2 | CO1 |
| | c. | Illustrate the difference between zener and avalanche breakdown. | 6 | L2 | CO1 |
| | | **OR** | | | |
| 2 | a. | Discuss half wave rectifier with capacitor filter. Memorize ripple factor. | 7 | L2 | CO1 |
| | b. | Describe with neat sketch and working operation of RC coupled amplifier and specify frequency response with parameters. | 7 | L2 | CO1 |
| | c. | Discriminate half wave rectifier and full wave rectifier. | 6 | L2 | CO1 |
| | | **Module – 2** | | | |
| 3 | a. | Describe the operation of crystal oscillator and state its applications. | 7 | L2 | CO2 |
| | b. | Discuss any two applications of OPAMP. | 7 | L2 | CO2 |
| | c. | State ideal and practical characteristics of OPAMP. | 6 | L2 | CO2 |
| | | **OR** | | | |
| 4 | a. | Explain the concept for sustained oscillations of ladder type network oscillator. | 7 | L2 | CO2 |
| | b. | Define multivibrator and also discuss single stage astable oscillator using OPAMP. | 7 | L2 | CO2 |
| | c. | Describe various blocks of OPAM and discuss its measurable parameter. | 6 | L2 | CO2 |
| | | **Module – 3** | | | |
| 5 | a. | i) Convert $(725.25)_8$ to ( $)_{10}$ and ( $)_2$<br>ii) Determine the value of x if $(211)_x = (152)_8$ | 7 | L3 | CO3 |
| | b. | Discuss the different theorems and postulates of Boolean Algebra and prove each of them with truth table. | 7 | L2 | CO3 |
| | c. | Find the complement of functions $F_1$ and $F_2$<br>i) $F_1(x, y, z) = x'yz' + x'y'z$<br>ii) $F_2(x, y, z) = x(y'z' + yz)$. | 6 | L3 | CO3 |

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| | | **OR** | | | |
| **6** | a. | Simplify and realize the expression using NAND and NOR<br>F = AB + AC + BD + CD. | **7** | **L3** | **CO3** |
| | b. | Implement full adder circuit with truth table and deduce expression for sum and carry. | **7** | **L2** | **CO3** |
| | c. | Implement EX–OR and EX–NOR using NAND. | **6** | **L2** | **CO3** |
| | | **Module – 4** | | | |
| **7** | a. | Define general computing system. Describe its classification in contrast to embedded system. | **7** | **L2** | **CO4** |
| | b. | Compare microprocessor and microcontroller with silent features. | **7** | **L2** | **CO4** |
| | c. | Explain the following :<br>i) Transducers<br>ii) Actuators. | **6** | **L2** | **CO4** |
| | | **OR** | | | |
| **8** | a. | Explain various elements of embedded systems and state its applications. | **7** | **L2** | **CO4** |
| | b. | Distinguish RISC and CISC. | **6** | **L2** | **CO4** |
| | c. | Explain :<br>i) 7 segment LED display<br>ii) Sensor. | **7** | **L2** | **CO4** |
| | | **Module – 5** | | | |
| **9** | a. | Explain the concept of AM wave and interpret MI and transmission efficiency. | **7** | **L2** | **CO5** |
| | b. | Discuss the various modes of radio wave propagation. | **7** | **L2** | **CO5** |
| | c. | Describe ASK used in communication system. | **6** | **L2** | **CO5** |
| | | **OR** | | | |
| **10** | a. | Discuss frequency modulation in communication system and describe MI and frequency deviation. | **7** | **L2** | **CO5** |
| | b. | Describe the various block of communication system. | **6** | **L2** | **CO5** |
| | c. | Explain PSK modulation technique in communication system. | **7** | **L2** | **CO5** |

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