



Reg. No.:

Name:

University of Kerala

First Semester FYUGP Degree Examination, December 2025

Discipline Specific Core Course

ELECTRONICS

UK1DSCELE101 - Basic Electronic Technology

Academic Level: 100-199

2024 Admission onwards

Time: 1 Hour 30 Minutes(90 Mins.)

Max. Marks: 42

Part A. 6 Marks.Time:6 Minutes.(Cognitive Level:Remember(RE)/Understand(UN)) Objective Type. 1 Mark
Each.Answer all questions

| Qn No. | Question | CL | CO |
|--------|---|----|----|
| 1 | Convert the binary number $(10010110)_2$ to Hexadecimal | RE | 3 |
| 2 | Define De Morgan's first law. | RE | 4 |
| 3 | What is meant by depletion region? | UN | 2 |
| 4 | Explain the binary number? | UN | 3 |
| 5 | Explain about Internet of Things. | UN | 1 |
| 6 | Tell the application of ASCII code | UN | 4 |

Part B.8 Marks.Time:24 Minutes.(Cognitive Level:Understand(UN)/Apply(AP))Short Answer. 2 marks each.Answer all questions

| Qn No. | Question | CL | CO |
|--------|--|----|----|
| 7 | Explain 2's complement method with the help of an example. | UN | 3 |
| 8 | Differentiate between forward bias and reverse bias conditions to a PN junction diode. For each condition ,explain effect on the width of the depletion and the resulting current flow | UN | 2 |
| 9 | Explain any two roles of electronics in modern society. | AP | 1 |
| 10 | Illustrate $A + AB = A$. | AP | 4 |

Part C. 28 Marks.Time:60 Minutes (Cognitive Level:Apply(AP)/Analyse(AN)/Evaluate(EV)/Create(CR)) Long Answer.7 marks each.Answer all 4 Questions choosing among options * within each question

| Qn No. | Question | CL | CO |
|--------|----------|----|------|
| 11 | A) | AP | 4, 4 |

| Qn No. | Question | CL | CO |
|--------|---|----|------|
| | <p>Reduce the expression $\pi M(2,8,9,10,11,12,14)$ using K-map</p> <p>OR</p> <p>B)</p> <p>State different laws of Boolean?</p> | | |
| 12 | <p>A)</p> <p>With diagrams explain the working of LED.</p> <p>OR</p> <p>B)</p> <p>Analyze the behavior of a PN junction diode under forward and reverse bias. Explain the movement of charge carriers and the resulting current flow.</p> | AN | 2, 2 |
| 13 | <p>A)</p> <p>Explain different types of number systems with example</p> <p>OR</p> <p>B)</p> <p>Give a brief description about BCD Code, Gray Code, Excess 3 code, ASCII code</p> | EV | 3, 3 |
| 14 | <p>A)</p> <p>Design a block diagram to show the role of electronics in a smart home system and explain its working.</p> <p>OR</p> <p>B)</p> <p>Define Electronics? Briefly explain about Role of Electronics in various field.</p> | CR | 1, 1 |