



Reg. No.: .....

Name: .....

## University of Kerala

First Semester FYUGP Degree Examination, December 2025

Discipline Specific Core Course

### ELECTRONICS

#### UK1DSCELE100 - Electronics in Modern 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	Name one application of virtual reality	RE	1
2	Name the device which converts light to electrical current in a reverse biased condition	RE	3
3	Draw an AC signal with proper markings	UN	4
4	Give any one application of LED.	UN	1
5	Explain the working principle of LED	UN	3
6	Give the colour code of 10K resistor with 10% tolerance.	UN	2

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	Write the formula for resistors connected in parallel and give an example.	UN	2
8	Describe the importance of Internet of Things	UN	1
9	Demonstrate what happens to the depletion region of a PN junction diode when no external voltage is applied	AP	3
10	A sinusoidal voltage has a peak value of 12 V. Find its RMS and average values.	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	1, 1

Qn No.	Question	CL	CO
	<p>Identify the role of Artificial Intelligence and Robotics in different fields</p> <p>OR</p> <p>B)</p> <p>Demonstrate the impact of Biometrics in different fields</p>		
12	<p>A)</p> <p>Analyze the effect of adding an additional resistor in series and parallel circuit</p> <p>OR</p> <p>B)</p> <p>Compare capacitors in series and parallel connections.</p>	AN	2, 2
13	<p>A)</p> <p>Explain how depletion region is formed in a PN junction diode without external supply. What is the effect of external supply.</p> <p>OR</p> <p>B)</p> <p>Evaluate why Zener diodes are preferred for voltage regulation.</p>	EV	3, 3
14	<p>A)</p> <p>An alternating voltage is given by <math>V=240\sin 316t</math>. Deduce time period, frequency, rms value and average value of voltage.</p> <p>OR</p> <p>B)</p> <p>Formulate the waveform parameters phase angle and phase difference</p>	CR	4, 4