VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama" Belagavi – 590018

Mini Project Report on

"NON-INVASIVE BLOOD GROUP DETECTION"

Submitted in partial fulfillment of the requirements for the award of degree

BACHELOR OF ENGINEERING
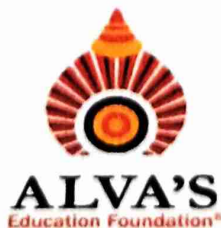### IN
ELECTRONICS & COMMUNICATION ENGINEERING

Submitted By

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

CERTIFICATE

This is to certify that the following students,

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has submitted Project synopsis on "NON-INVASIVE BLOOD GROUP DETECTION" for VI Semester B.E. in Electronics & Communication Engineering during the academic year 2023-24. The mini project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.

Mini Project Guide

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ABSTRACT

Non-invasive blood group detection is an emerging technology that offers significant advantages over traditional methods, such as avoiding discomfort and reducing infection risks. This project presents a novel system for non-invasive blood group detection using Near-Infrared (NIR) sensors, an Arduino microcontroller, an LED display, an I2C module, and an ESP32. The NIR sensor detects variations in light absorption through the skin, which correlates with different blood group characteristics. The Arduino processes the sensor data and communicates with the LED display via the I2C module to present the detected blood group in real-time. The ESP32 provides wireless connectivity for data transmission and remote monitoring. This system aims to provide a quick, reliable, and user-friendly solution for blood group determination, with potential applications in emergency medical services, personal health monitoring, and point-of-care diagnostics. The integration of these components creates a compact and cost-effective device, paving the way for advancements in non-invasive medical diagnostics.