



Full Name : _____ Student ID: _____

Grade Table (for Lecturer use only)

Question	Points	Score
1	5	
2	5	
3	5	
4	5	
5	5	
6	5	
7	5	
8	5	
9	5	
10	5	
11	50	
Total:	100	

Instructions for Applied Final Exam

Welcome to the applied final exam of EEE423 - Embedded Systems and good luck!

Please read the following rules and confirm by signing that you have read and understood the rules before you receive your exam:

- The applied final exam shall be conducted between 09:00 and 12:00. Exam duration is 180 minutes. Students must finalise the first 10 questions of the exam by delivering it before 09:20. Students are not allowed to leave the exam in the first 20 minutes. Afterwards, an applied exam regarding students' projects will be conducted.
- This is a closed-book exam which means that students are not allowed to take notes, books, or any other reference material into the exam. Throughout the exam, students shall not possess mobile phones and electronic devices that are capable of storing, receiving or transmitting information or electronic signals, such as computerised watches.
- I am acknowledged that the course lecturer is allowed to take photos belonging to me and my project, and to publish the photos on the department's web site.

In recognition of and in the spirit of the above rules which constitute Adana Alparslan Türkeş Science and Technology University Honour Code, I certify that I will neither give nor receive unpermitted aid on this examination.

Signature: _____



1. **(5 points)** PWM is a modulation technique that allows the encoding of _____ information in a binary digital signal.
 - (a) Logical
 - (b) Modular
 - (c) Digital
 - (d) Analog

2. **(5 points)** NVIC is an integral part of the Cortex-M4 architecture. Which of the followings is not a function of the NVIC?
 - (a) Detect interrupt requests at its inputs
 - (b) Combine interrupt requests into a single interrupt request to the keyboard
 - (c) Capability to mask any given input
 - (d) Associate inputs to interrupt priority levels

3. **(5 points)** Which of the followings is not a characteristic of an ADC?
 - (a) Resolution
 - (b) Conversion Time
 - (c) AC and High Frequency Errors
 - (d) Differential Non-linearity

4. **(5 points)** Which of the followings are not a group of serial communication protocols?
 - (a) UART, SPI, I2C
 - (b) CAN, Ethernet
 - (c) RS-232, USB, SATA
 - (d) SCSI, PCI, IEEE-488

5. **(5 points)** What does CAN stand for?
 - (a) Community Area Network
 - (b) Coordinated Assistance Network
 - (c) Controller Area Network
 - (d) Custom Automotive Network



6. (5 points) Which of the followings is not a USB HCI?
- (a) EHCI
 - (b) QHCI
 - (c) UHCI
 - (d) xHCI
7. (5 points) Which of the following is not an Ethernet standard?
- (a) Fast Ethernet (IEEE 802.3u)
 - (b) Extremely Fast Ethernet (IEEE 802.3xu)
 - (c) Gigabit Ethernet (IEEE 802.3z)
 - (d) 10 Gigabit Ethernet (IEEE 802.3ae)
8. (5 points) What does UML stand for?
- (a) United Model Language
 - (b) User Modification Language
 - (c) Universal Markup Language
 - (d) Unified Modelling Language
9. (5 points) A/an _____ is a program segment that executes concurrently to other program segments. Hence, each _____ is characterised by its own program counter, its own set of processor registers and its own stack, while sharing the other memory regions with the others.
- (a) RTOS
 - (b) Thread
 - (c) MCU
 - (d) Concurrency
10. (5 points) A/an _____ is a layer of software between the hardware and the application software that allows the implementation of concurrent tasks implemented by multi-threading.
- (a) BOS
 - (b) DOS
 - (c) NOS
 - (d) RTOS



11. This part will be completed and evaluated by the course lecturers according to students' projects.

Title of the Project:

(a) **(10 points)** Organisation

Examiner 1 ()

Examiner 2 ()

Examiner 3 ()

Average ()

(b) **(10 points)** Utilisation

Examiner 1 ()

Examiner 2 ()

Examiner 3 ()

Average ()

(c) **(10 points)** Knowledge

Examiner 1 ()

Examiner 2 ()

Examiner 3 ()

Average ()

(d) **(10 points)** Innovation

Examiner 1 ()

Examiner 2 ()

Examiner 3 ()

Average ()

(e) **(10 points)** Presentation

Examiner 1 ()

Examiner 2 ()

Examiner 3 ()

Average ()

Total (out of 50 points)

Examiner Status	Examiner No.	Full Name	Signature
Internal Examiner	Examiner 1	Kasım ZOR	
Internal Examiner	Examiner 2	Barış AYDIN	
External Examiner	Examiner 3	Ömer Can TOLUN	