

NETTUR TECHNICAL TRAINING FOUNDATION
DIPLOMA IN COMPUTER ENGINEERING & IT INFRASTRUCTURE – CP08
IV SEMESTER REGULAR & SUPPLEMENTARY EXAMINATION-JULY 2023

Subject: IoT
Subject Code: CP08409T

Total Time: 2 Hr.
Total Marks: 50

PART B

1.0 ANSWER ANY EIGHT OF THE FOLLOWING

2*8=16

- 1.1 What are things in context with IoT?
- 1.2 Explain Serial.begin(rate) with Syntax.
- 1.3 What are the two types of Communication Protocols?
- 1.4 What is ESP8266?
- 1.5 Mention the different variants of a Raspberry Pi.
- 1.6 Define Python. Mention the different data types in Python
- 1.7 What are embedded devices and IoT Devices?
- 1.8 What is a Module? What are the variables in module?
- 1.9 Mention the 5 layers of IoT architecture
- 1.10 How does MQTT work?

2.0 ANSWER ANY SIX OF THE FOLLOWING

3*6=18

- 2.1 Draw a neat diagram of three tier architecture of IoT
- 2.2 What is TCP/IP?
- 2.3 Draw the basic block diagram of Raspberry pi.
- 2.4 How are sensors categorized and give an example for each.
- 2.5 What are the 5 important SPI pins in raspberry Pi?
- 2.6 Why do we need Internet of Things? What are the limitations of IoT?
- 2.7 What are the 7 layers of OSI model?
- 2.8 What are the Subscribers and Publishers in MQTT?

3.0 ANSWER ANY FOUR OF THE FOLLOWING

4*4=16

- 3.1 Define M2M and how does it works?
- 3.2 Write a program for blinking LED
- 3.3 Explain the procedure to setup and connect the Up squared Board
- 3.4 What are the differences between IoT and IIoT ?
- 3.5 List out few applications of ESP8266 Wi-Fi module
- 3.6 Write a short note on UART & CAN

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Subject: Oracle 10g SQL & PL/SQL

Time: 2 Hr.

Subject Code: CP080401

Marks: 50

PART B

1.0 ANSWER ANY EIGHT OF THE FOLLOWING

2*8=16

- 1.1 How do you select a data from the partitioned table?
- 1.2 How can find the total number of records in a table?
- 1.3 Write Oracle SQL Query to drop a table
- 1.4 Write Oracle SQL Query to drop a table space
- 1.5 Write PL/SQL block to print the message: Hello, NTTF
- 1.6 What is Generalization?
- 1.7 Write Oracle SQL Statement to truncate a table
- 1.8 Write Oracle SQL Query to get data dictionary of a sequence
- 1.9 What are the data types of PL/SQL?
- 1.10 What is database application? Give an example for database application

2.0 ANSWER ANY SIX OF THE FOLLOWING

3*6=18

- 2.1 Write Oracle SQL Statement to create a table name emp with columns eno, ename, sal, doj
- 2.2 Write Oracle SQL Query to sort data
- 2.3 What are the differences between a DELETE and a TRUNCATE statement?
- 2.4 What is partitioning in a table?
- 2.5 List out any four predefined exceptions
- 2.6 What are implicit cursor attributes?
- 2.7 Explain the types of sub queries
- 2.8 Explain Altering views

3.0 ANSWER ANY FOUR OF THE FOLLOWING

4*4=16

- 3.1 Explain different numerical functions used in oracle with sample queries
- 3.2 Explain foreign key constraints and show how to add this constraint in sample tables
- 3.3 Draw the symbols of entity, weak entity, relationship, attribute, primary key attribute, multivalued attribute diagrams
- 3.4 What are Shared Pool, Library Cache and data dictionary cache?
- 3.5 Explain range, list and hash partition with suitable examples
- 3.6 What is PL/SQL? Explain its advantages

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Subject: Embedded Programming
Subject Code: CP080404

Time: 2 Hr.
Marks: 50

PART B

- 1.0 ANSWER ANY EIGHT OF THE FOLLOWING** **2*8=16**
- 1.1 Define Embedded system. Give two examples.
 - 1.2 Explain standalone embedded system. How is it different from other systems?
 - 1.3 What short notes on Round Robin Algorithm
 - 1.4 Explain BOR in PIC.
 - 1.5 What is I2C Programming?
 - 1.6 Explain Inter process communication.
 - 1.7 Explain the SLEEP mode of PIC microcontroller.
 - 1.8 Draw the Software Architecture of Embedded System.
 - 1.9 Write any two features of PIC controller.
 - 1.10 What is Interrupt Recovery time?
- 2.0 ANSWER ANY SIX OF THE FOLLOWING** **3*6=18**
- 2.1 Differentiate between RISC and CISC.
 - 2.2 Write a program to blink an LED connected on PORTC.
 - 2.3 Draw the block diagram of ADC.
 - 2.4 Explain about mail box & message queue.
 - 2.5 Explain the arithmetic and logical instruction set with example
 - 2.6 Draw and explain the Status register of PIC 16f877A.
 - 2.7 Write a program for generating a delay using timer.
 - 2.8 Differentiate between hard RTOS and soft RTOS.
- 3.0 ANSWER ANY FOUR OF THE FOLLOWING** **4*4=16**
- 3.1 Write short notes on:
a) Task scheduling b) Segmentation c) Paging d) Fragmentation
 - 3.2 Explain briefly about LCD Interface with microcontroller with neat diagram.
 - 3.3 Explain the Addressing modes of PIC16f877a with example.
 - 3.4 Draw and explain the memory organization of PIC 16f877A.
 - 3.5 Explain about Stepper motor control with diagram.
 - 3.6 Write a program in PIC to add two 32 bit number without carry.

