

**B.TECH**  
**(SEM V) THEORY EXAMINATION 2022-23**  
**PROGRAMMING& INTERFACING WITH MICROCONTROLLERS**

**Time: 3 Hours****Total Marks: 100****Note:** Attempt all Sections. If require any missing data; then choose suitably.

**SECTION A**

**1. Attempt all questions in brief. 2 x 10 = 20**

- a. Define ARM.
- b. What is open source platform?
- c. Give few applications of Raspberry Pi.
- d. What is the difference between analog circuit and digital circuits?
- e. Define open framework.
- f. What type of actuator is used in Arduino?
- g. Define SQLite.
- h. What is XML stand for?
- i. What is difference TCP and UDP?
- j. What is the future scope of IoT?

**SECTION B**

**2. Attempt any three of the following: 10 x 3 = 30**

- a. What is process code? Explain variables and flow control.
- b. Write the steps for problem solving in programming? Explain DAC.
- c. Explain the concept of serial peripheral interface (SPI). Give few example of SPI.
- d. Why is interfacing needed? Explain I/O interfacing in detail.
- e. Explain building peer to peer communication system using Bluetooth & WiFi.

**SECTION C**

**3. Attempt any one part of the following: 10 x 1 = 10**

- a. Explain sensor characterization. How can we characterize sensor performance?
- b. What are the ARM devices? Discuss real world interfacing.

**4. Attempt any one part of the following: 10 x 1 = 10**

- a. Discuss hardware framework. What is a Raspberry Pi used for?
- b. Explain Raspberry Pi Technology.

**5. Attempt any one part of the following: 10 x 1 = 10**

- a. How do hardware components communicate with each other?
- b. Explain XML Interface with suitable example.

**6. Attempt any one part of the following: 10 x 1 = 10**

- a. Explain PHP. What is difference between SQL and SQLite?
- b. Explain Live Network feeds (push and pull).

**7. Attempt any one part of the following: 10 x 1 = 10**

- a. Explain UDP in detail.
- b. Write short notes on (i)Internet of things (ii) TCP/IP model