



**K. K. Wagh Institute of Engineering Education & Research, Nashik**  
(An Autonomous Institute From A.Y. 2022-23)

SUMMER-2024	
Exam Seat No.:	
Academic Year:2023-2024	Semester:III
Class:SY	Program:B.Tech
Branch Code:MEC	Pattern:2022
Name of Course:Basic Electronics for Mechanical Engineering	Course Code:MEC222004
Max. Marks:60	Duration:2.30 Hrs.

**Instructions:** Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains 2 page(s).
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

**Question No. 1 Attempt following Question**

- 1a) Draw and explain working of S-R flip (6) CO1

**Question No. 2 Attempt following Question**

- 2a) What do you mean by I2C, CAN & MOST bus, also state the applications of each (6) CO2

**Question No. 3 Attempt following Question**

- 3a) Draw the circuit symbol of Thermistor and state its features and applications (8) CO3

**OR**

- 3b) What are the advantages and disadvantages of Capacitive sensors (8) CO3

- 3c) state the different types of displacement sensors and explain anyone in detail (8) CO3

**OR**

- 3d) Draw and explain block diagram of Instrumentation system (8) CO3

**Question No. 4 Attempt following Question**

- 4a) Define Microcontroller and Draw block diagram of Microcontroller (8) CO4

**OR**

- 4b) Explain the need and applications of Microcontroller (8) CO4

4c) Explain different Addressing Modes of 8051 Microcontroller with examples. (8) CO4

**OR**

4d) Explain different mode for serial communication for 8051 Microcontroller. (8) CO4

**Question No. 5 Attempt following Question**

5a) Define Modulation. Explain the need & Types of Modulation. (8) CO5

**OR**

5b) Compare General Purpose Computer and Embedded Computers. (8) CO5

5c) What does WIGI Stands for and explain the working and types of WIFI (8) CO5

**OR**

5d) With suitable diagram explain encoding and decoding in Digital Communication System (8) CO5

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