



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

| InSem Examination-II Summer 2025 | |
|---|------------------------|
| Exam Seat No.: | |
| Academic Year: 2024-2025 | Semester: VI |
| Class: TY | Program: B.Tech |
| Branch Code: ADS/COM/CSD | Pattern: 2022 |
| Name of Course: Microcontrollers and Embedded Systems | Course Code: COM223017 |
| Max. Marks: 30 | Duration: 1.15 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 TWO pages.
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 column indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

Marks CO

Question No. 1

- | | | |
|---|-----|-----|
| 1 a) List any 6 features of 8051 microcontroller. | (3) | CO1 |
| 1 b) Show and explain in brief PSW of 8051 microcontroller. | (4) | CO1 |

Question No. 2

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|---|-----|-----|
| 2 a) Show pin diagram of 8051 microcontroller. | (4) | CO1 |
| 2 b) Show and explain SCON SFR of 8051 microcontroller. | (4) | CO1 |

Group OR

- | | | |
|--|-----|-----|
| 2 c) Show and explain register bank of 8051 microcontroller. | (4) | CO1 |
| 2 d) Show and explain IE SFR of 8051 microcontroller. | (4) | CO1 |

Question No. 3

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|---|-----|-----|
| 3 a) Identify and correct error in following assembly code: | (3) | CO2 |
|---|-----|-----|

START

MOV A, #12H

MOV B, #34H

SWAP A, B

END

- | | | |
|---|-----|-----|
| 3 b) Explain following addressing modes of 8051 microcontroller with example: | (4) | CO2 |
| 1. Direct Addressing mode | | |

2. Register Indirect addressing mode

Question No. 4

- 4 a) Construct assembly language program to configure Port 0 as input port. (4) CO2
- 4 b) Make use of assembly language instructions to write a program to multiply two 8 bit numbers and store the result at 75H. (4) CO2

Group OR

- 4 c) Explain Loop instructions of 8051 microcontroller with example. (4) CO2
- 4 d) Make use of assembly language instructions to write a program for finding AND, EXOR. (4) CO2

..... **End of question paper**.....