# K. K. Wagh Institute of Engineering Education & Research, Nashik

(An Autonomous Institute From A.Y. 2022-23)

| WINTER-2025 | |
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| Exam Seat No.: | |
| Academic Year:2025-2026 | Semester:VI |
| Class:TY | Program:B.Tech |
| Branch Code:ETC | Pattern:2022 |
| Name of Course:Advanced Processors | Course Code:ETC223014(C) |
| 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 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 columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

| | | Marks | CO |
|---|---|---|---|
| **Question No. 1** | | | |
| 1a) | Compare ARM Cortex-A, Cortex-R, and Cortex-M processors. | (6) | CO1 |
| **Question No. 2** | | | |
| 2a) | Write features of the STM32F4xx | (6) | CO2 |
| **Question No. 3** | | | |
| 3a) | Draw and Explain the interfacing diagrams for LDR and MQ-3 sensors with STM32F4xx. | (8) | CO3 |
| | **OR** | | |
| 3b) | Interface seven-segment LED with STM32F4xx. | (8) | CO3 |
| 3c) | Explain the architecture of general-purpose timers in STM32F4xx. | (8) | CO3 |
| | **OR** | | |
| 3d) | Configure STM32F4xx with DAC to generate sine wave. | (8) | CO3 |
| **Question No. 4** | | | |
| 4a) | Write features of CAN Bus. | (8) | CO4 |
| | **OR** | | |
| 4b) | Draw an interfacing diagram and write an algorithm to interface Accelerometer MPU 6050 using STM32F4xx and display the result on LCD. | (8) | CO4 |
| 4c) | Write algorithm to generate PWM of 25% duty cycle using STM32F4xx | (8) | CO4 |
| | **OR** | | |
| 4d) | Interface DC Motor with STM32F4xx microcontroller. | (8) | CO4 |
| **Question No. 5** | | | |
| 5a) | Write steps to debug STM32 project using STM 32CubeIDE. | (8) | CO5 |

**OR**

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|---|---|---|---|
| 5b) | Explain Rasberi Pi for image processing application | (8) | CO5 |
| 5c) | Compare STM32CubeIDE to traditional IDEs. | (8) | CO5 |

**OR**

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|---|---|---|---|
| 5d) | Compare Nucleo boards and other development boards. | (8) | CO5 |

**····· End of question paper·····**