



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

WINTER-2025	
Exam Seat No.:	
Academic Year:2025-2026	Semester:V
Class:TY	Program:B.Tech
Branch Code:ETC	Pattern:2022
Name of Course:Interfacing Techniques	Course Code:ETC223006(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
<b>Question No. 1</b>		
1a) Interface GLCD with Microcontroller.	(6)	1
<b>Question No. 2</b>		
2a) Explain CAN protocol with diagram.	(6)	2
<b>Question No. 3</b>		
3a) Write specification ADC built in Microcontroller and interface two sensor to it.	(8)	3
<b>OR</b>		
3b) Design Data acquisition system.	(8)	3
3c) Write a program to generate Sinusoidal waveform using DAC.	(8)	3
<b>OR</b>		
3d) Interface temperature sensor to Microcontroller.	(8)	3
<b>Question No. 4</b>		
4a) Interface a 16 Kbyte RAM to Microcontroller.	(8)	4
<b>OR</b>		
4b) Draw the timing diagram for RAM.	(8)	4
4c) Compare RAM, ROM, cache memory.	(8)	4
<b>OR</b>		
4d) What are different types of ROM and what are their application?	(8)	4
<b>Question No. 5</b>		

5a) Interface DMA with 8bits Microprocessor and explain its working. (8) 5

**OR**

5b) Design application using Microcontroller to sense disease in crop and send it to farmer using IOT application. (8) 5

5c) What are the features of DMA IC? (8) 5

**OR**

5d) Draw the diagram to interface DMA, with many I/O Devices. (8) 5

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