



# GOVERNMENT COLLEGE OF ENGINEERING, JALGAON

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Name of Examination : **Winter 2020** - (Preview)

Course Code & Course Name : **IN303 - Micro Controller and Applications**

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Maximum Marks : **60**

Duration : **3 Hrs**

[Edit](#) [Print](#) [View Answer Key](#) [Close](#) **Answer Key Submission Type:** Marking scheme with model answers and solutions of numerical

Instructions:

1. All questions are compulsory.
2. Illustrate your answer with suitable figures/sketches wherever necessary.
3. Assume suitable additional data; if required.
4. Use of logarithmic table, drawing instruments and non programmable calculators is allowed.
5. Figures to the right indicate full marks.

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|--|------|
| <b>1) Solve any two Question.</b>  | [12] |
| a) Explain different addressing mode of microcontroller with example.  | [6]  |
| b) Develop Assembly Language program (ALP) to find the largest number in a Block of 10 numbers stored at location 30H onwards in internal RAM. | [6]  |
| c) Describe serial communication in 8051. Explain the use of SCON register.  | [6]  |
| <b>2) Solve any two Question.</b>  | [12] |
| a) Explain with sketch the interfacing of 4 × 4 matrix keypad with 8051 microcontroller.   | [6]  |
| b) Develop an ALP to generate square wave of 3 KHz using 8051 microcontroller on port pin P2.3 (Assume Xtalfreqn = 12 MHz)                     | [6]  |
| c) i. Draw the format of PSW register of 8051 microcontroller and explain the function of each bit.  | [4]  |
| ii. Write application of PIC microcontroller.  | [2]  |
| <b>3) Solve any two Question.</b>  | [12] |
| a) Develop an ALP to transmit message "GCOEJ" serially at baud rate 4800 8bit data , 1 stop bit. Assume crystal frequency of 11.0592 MHz .     | [6]  |
| b) Explain the following instructions with example.  | [6]  |
| i. DAA   | [2]  |
| ii. ANL  | [2]  |
| iii. SWAP A  | [2]  |
| c) Write an assembly language program to find largest number from the array of five numbers stored in internal RAM memory.                     | [6]  |
| <b>4) Solve Each Question</b>  | [12] |
| a) i. Explain processes of interrupt enabling and disabling in 8051.   | [3]  |
| ii. Sketch the internal memory organization in 8051.   | [3]  |
| b) Draw interfacing of stepper motor with 8051 and write an ALP to rotate it in clockwise direction.   | [6]  |
| <b>5) Solve Each Question</b>  | [12] |
| a) Explain the architecture of 8051 Microcontroller.   | [6]  |
| b) Explain the architecture of PIC Microcontroller .   | [6]  |

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