

Code No: RT32021

# R13

SET - 1

### III B.Tech II Semester Supplementary Examinations, April/May - 2019

#### MICROPROCESSORS AND MICROCONTROLLERS

(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)

2. Answering the question in **Part-A** is compulsory

3. Answer any **THREE** Questions from **Part-B**

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**PART –A**

1.
  - a) What a Status register does in a Microprocessor. [3M]
  - b) List the signals with common functions in both minimum and maximum modes. [4M]
  - c) List the steps involved in execution of a program [3M]
  - d) State the number of address line required to interface 128 K memory. [4M]
  - e) Explain Rotate and Swap instructions of 8051 in brief. [4M]
  - f) Explain the operation of timer in mode 3 of 8051. [4M]

**PART -B**

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|---|----|--|------|
| 2 | a) | Explain the various flags of 8086 give their significance and their conditions in various instances.   | [8M] |
|   | b) | Draw the 8086 Internal block diagram and explain the each block in brief.                              | [8M] |
| 3 | a) | Explain in detail about the I/O addressing capabilities of 8086.                                       | [8M] |
|   | b) | Define Bus cycle, and explain the minimum mode read and write bus cycle with necessary timing diagram. | [8M] |
| 4 | a) | Explain the different addressing modes of 8086 with examples.  | [8M] |
|   | b) | Develop an recursive program in 8086 ALP to find the sum of the first 'n' integers.                    | [8M] |
| 5 | a) | Discuss how to interface I/O devices with 8086 using 8255.   | [8M] |
|   | b) | What do you mean by BSR mode? And explain it in detail.  | [8M] |
| 6 | a) | Compare between a microprocessor and a micro controller.   | [4M] |
|   | b) | Explain how a program memory and a data memory are interfaced with 8051.                               | [8M] |
|   | c) | Explain about Internal and external interrupt of 8051 microcontroller                                  | [4M] |
| 7 | a) | Explain how to interface push buttons and relays with 8051 microcontroller                             | [8M] |
|   | b) | Discuss the interfacing of Analog to Digital converter with 8051.                                      | [8M] |

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