2101238

BACHELOR OF VOCATION

Automotive Mechatronics

Subject: Microcontroller and Programmable Logic Controller

Subject Code: ABEC-205

Semester: Third

January 2021

Theory (External): 35 Marks

Time: 03 Hours

Instructions to the Students

1. This Question paper consists of two Sections. All sections are compulsory.
2. Section A comprises 10 questions of objective type in nature. All questions are compulsory. Each question carries 1 mark.
3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 5 marks.
4. Read the questions carefully and write the answers in the answer sheets provided.
5. Do not write anything on the question paper.
6. Wherever necessary, the diagram drawn should be neat and properly labelled

Roll Number

SECTION –A (SHORT/OBJECTIVE TYPE QUESTIONS)
(10x1=10 Marks)

A. Mention some of the advantages and application of microcontroller in our daily life.

B. Explain the memory structure of 8051.

C. What is PSW?

D. Give the addressing modes of 8051

E. What is the purpose of using instruction register in microcontroller.

F. Draw the block diagram of a Programmable Logic controller.

G. Draw the circuit diagram of PLC input module.

H. Mention the applications of PLC in industries.

I. What are counters?

J. Draw Off-delay timer timing diagrams.

SECTION –B (ESSAY TYPE QUESTIONS)
(5X5=25 Marks)

1. Compare between microprocessor and microcontroller in details.
2. Draw the PIN diagram and block diagram of an 8051 microcontroller
3. Explain the vector address and priority sequence of 8051 interrupts
4. Write a short note on retentive timers.
5. Explain input and output module of PLC with circuit diagram.
6. Explain the Functional Block Diagrams in PLC.
7. What is UP Counter. Draw the program and timing diagram foran SLC 500 Count-Up Counter.
8. Explain Advantages, Disadvantages and industrial applications of PLC in detail.

*****END OF PAPER*****