

**B.VOC. AUTOMOTIVE MANUFACTURING
and**

B.VOC. AUTOMOTIVE MECHATRONICS

Subject: Basics of Mechatronics

Subject Code: ABME-106

Semester: 2nd (Re-appear)

Batch: 2017-20

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 6 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

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SECTION -A (OBJECTIVE TYPE QUESTIONS)

(10x1=10 Marks)

Q1 All questions are compulsory

- a) What do you mean by Mechatronics?
- b) Write any two applications of Mechatronics.
- c) Define any two static and dynamic characteristics of Sensors.
- d) Difference between Sensor and Transducer.
- e) What do you mean by Light Sensor?
- f) What do you mean by Counters?
- g) Explain types of Stepper motor in brief.
- h) Write any three applications of Servo Motor
- i) Difference between Pneumatic and Hydraulics System.
- j) Define Principle of Pneumatic System.

SECTION -B (ESSAY TYPE QUESTIONS)

(5x5=25 Marks)

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- Q1 Explain the concept and need for Mechatronics
- Q2 What do you mean by Temperature sensors? Explain their types with the help of a diagram.
- Q3 Draw a block diagram of a PLC showing the main functional items and how buses link them, Also explaining the functions of each block.
- Q4 State the following terms in brief of PLC.
- 1) Execution time.
 - 2) Isolation.
 - 3) Processing time.
 - 4) Dry contacts
 - 5) Master Reset.
- Q5 Explain construction and working principle of Servomotor
- Q6 Describe the concept of design process of Mechatronics and different stages of design process in details.

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