Seat No.

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MAR_APR 2026 SUMMER EXAMINATION

1154 B.Tech. CBCS

Sub. Name: Mechatronics

Sub. Code: 68508/84843/84950

Day and Date: Saturday ,23-05-2026 **Total Marks: 70**

Time: 02:30 PM To 05:00 PM

Instructions: **1. All questions are compulsory**
2. Draw neat labelled diagrams wherever necessary
3. Figures to the right indicate full marks

Q1) Attempt the following **[10]**

a. Give Two definitions of Mechatronics & explain the concept w.r.t Microwave Oven **[5]**

b. Explain proximity sensor with help of neat sketch **[5]**
OR
What do you mean by filtering? Discuss any two filters?

Q2) Attempt the following **[10]**

a. Explain DAC in brief **[5]**

b. Explain Op-Amp as summing amplifier **[5]**

Q3) Attempt the following **[15]**

a. Explain pin diagram of 8051 and explain in brief **[7]**

b. Explain combinational & sequential logic with suitable example **[8]**
OR
Explain following assembly language instructions
i) MOV ii) INC A iii) LDA iv) JMP

Q4) Attempt the following **[10]**

a. What are ladder programs? Explain what is the use of Timer in ladder program **[5]**

b. Explain sample and hold circuit **[5]**

Q5) Attempt the following **[15]**

a. For a PLC based bottling plant application explain **[7]**

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i)Internal relay ii) Counter iii) Timer
OR
Explain always ON & always OFF contacts in PLC programming with ladder diagram.

b. Explain traffic light control application with ladder programing **[8]**

Q6) Attempt the following **[10]**

a. Explain SCADA & its application **[5]**

b. Write note on Arduino as microcontroller **[5]**
OR
Explain Distributed Control System (DCS)

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -
This Question Paper may be distributed for following Subjects as common code.
सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (101) Bachelor of Engineering (68508) Mechatronics Part 4 SEM 8
2] (101) Bachelor of Engineering (84950) Mechatronics Part 4 SEM 8
3] (1154) B.Tech. CBCS (84843) Mechatronics Part 4 SEM 8

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