

RAN-2403080103066001

M. Sc. (Sem. - III) Examination October - 2025
Physics (Paper - PH-536) Microprocessors

Time: 2 Hours]
[Total Marks: 30
સૂચના : / Instructions

- (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book.
- (2) Assume the data if required.
- (3) Figures to right hand side indicate marks of each question.
- (4) Attempt any two of each question

Seat No.:

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Student's Signature

- Q. 1. a.**
- i. Convert the hexadecimal fraction $(A.C)_{16}$ to Decimal number. **(01)**
 - ii. Convert the binary number $(1001.1111)_2$ into decimal number. **(01)**
 - iii. Convert the decimal number $(0.1)_{10}$ to its equivalent binary number. **(01)**
 - iv. Perform the following binary multiplication. **(02)**
 $(10011010)_2 \times (11110000)_2$
 - v. Perform the following binary division. **(02)**
 $(10011100)_2 \div (110)_2$
 - vi. Perform the binary addition $(10111101.111)_2 + (01011111.11)_2$. **(01)**
- b.** Draw the block diagram of Intel 8085 and explain the various registers of it. **(08)**
- c.**
- i. Explain how the instruction word size are classified in Intel 8085 microprocessor. Explain them with illustration. **(04)**
 - ii. Explain how the instruction word and data word are processed during an instruction cycle. **(04)**
- Q. 2. a.**
- i. What are addressing modes? List the addressing modes of Intel 8085. Explain them with example. **(05)**
 - ii. Explain the function of the following instructions pertaining to Intel 8085 microprocessor. **(02)**
 - 1) DAA
 - 2) SUI data
- b.** Write the following assembly language programs.
- i. 8-bit multiplication with the following example. Multiply $(8A)_{16}$ by $(52)_{16}$ **(05)**
 - ii. Find one's complement of a 16-bit number. **(02)**
- c.**
- i. Write the assembly language programs to find the largest number from a series of 8-bit numbers. The numbers are: 98H, 75H and 99H **(04)**
 - ii. Explain the function of the following instructions of branch group pertaining to Intel 8085 microprocessors. **(03)**
 - 1) JNZaddr.
 - 2) JC addr.
 - 3) JPEaddr.