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WT—207—2024

FACULTY OF SCIENCE

M.Sc. (Second Year) (Fourth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2024

(CBCS/New Pattern)

PHYSICS

Paper PHY-403

(Microprocessors and Microcontrollers)

(Monday, 16-12-2024)

Time : 2.00 p.m. to 5.00 p.m.

Time—3 Hours

Maximum Marks—75

N.B. :— (i) Attempt all questions.

(ii) All questions carry equal marks.

(iii) Draw the necessary diagrams wherever in need.

1. What is Microprocessor ? Give architecture of microprocessor 8085 and explain in detail. 15

Or

(a) Construct the timing diagram for I/O read, write and explain it briefly. 8

(b) Discuss the terms in microprocessor : instruction cycle, execute cycle and machine cycle. 7

P.T.O.

2. Classify instruction set of 8085 according to function and explain any *five* logical group instructions with a suitable example. 15

Or

- (a) State various data transfer schemes in 8085 and compare synchronous and asynchronous data transfer schemes. 8
- (b) Construct an assembly language program in 8085 to add two 8-bit numbers and sum is 8-bit. 7
3. Draw the functional pin diagram of microprocessor 8086 and discuss the function of each pin. 15

Or

- (a) Discuss in brief arithmetic instructions of microcontroller 8051. 8
- (b) Explain the maximum mode of operation in 8086 microprocessor. 7
4. Draw the block diagram of 80960 microcontroller and explain the functions of each block. 15

Or

- (a) Discuss in brief register set of microcontroller 80196. 8
- (b) State the general features of UPI 452. 7

5. Write short notes on any *three* : 15

- (a) Flag register of 8085
- (b) DMA data transfer scheme
- (c) Features of 8051 microcontroller
- (d) Microcontroller MCS-96.