

YMCA UNIVERSITY OF SCIENCE & TECHNOLOGY, FARIDABAD

MSc. (Physics) III semester

Microprocessor (PHY 304)

NOTE: It is compulsory to answer the questions of Part -1. Limit your answers within 20-40 words in this part.

Answer any four questions from Part -2 in detail.

Different parts of the same question are to be attempted adjacent to each other.

Time: 3 Hours

Max. Marks:60

PART -1

- Q1 (a) What are the three main units of a digital computer? (2)
- (b) What is meant by low level and high level languages? (2)
- (c) Write down the difference between a compiler and an interpreter. (2)
- (d) What do you mean by handshaking signals? What is its significance? (2)
- (e) What is the difference between primary & secondary storage device? (2)
- (f) List the major components of the keyboard interface. (2)
- (g) Indicate the data types that can be handled by 8086 microprocessor. (2)
- (h) Explain the difference between HLT and HOLD states. (2)
- (i) What is a volatile memory? (2)
- (j) Draw the pin diagram of 8051 microcontroller. (2)

PART -2

- Q2 (a) Draw the architecture of 8085 and mention its various functional blocks. (7)
- (b) What jobs ALU of 8085 can perform? (3)
- Q3 (a) Mention the following: (5)
- (a) Control and Status signals
- (b) Interrupt signals
- (c) Serial I/O signals
- (d) DMA signals
- (e) Reset signals.

(b) What is meant by 'addressing mode'? Mention the different addressing modes. (5)

Q4 (a) Ten 8-bit numbers are stored starting from memory location 3100 H. Find the greatest of the ten numbers and store it at memory location 3500 H. (4)

(b) Draw and discuss the architecture of 8086. Mention the jobs performed by BIU and EU. (6)

Q5 (a) Write the control word format to initialize 8255. Also design a control word if Port A as input and ports B and C as output in mode 0 operations. (5)

(b) Explain how a stepper motor can be interfaced with microprocessor? (5)

Q6 (a) Explain how static RAM is interfaced to 8086. Give necessary interface diagram assuming appropriate signals and memory size. (5)

(b) With a neat block diagram explain the working of 8237 DMA controller (5)

Q7 (a) What is a coprocessor? Explain its need with 8086 microprocessor. (5)

(b) Compare 8086 and 8088 microprocessors. (5)