

Code No. : B04-401

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Fourth Semester Online Examination, May-June, 2022

M. Sc. PHYSICS

Paper IV

SPECIAL PAPER - IV ELECTRONICS - II

Time : Three Hours] [Maximum Marks : 80

Note : • Part A and B of each question in each unit consist of very short answer type questions which are to be answered in one or two sentences.

• Part C (Short answer type) and D (Long answer type) of each question should be answered within the word limit 200-250 and 400-450 words.

Unit-I

1. (A) Why memory segmentation is done for 8086 ? 2
- (B) Write the feature of 8086 microprocessor. 2
- (C) Draw and discuss flag of 8086 in brief. 4

Or

Explain the function of op code prefetch queue in 8086.

P. T. O.

(D) Explain the function of the following signals of 8086 : 12

- | | |
|-------------------------|-----------------------------------|
| (i) READY | (ii) $\overline{DT}/\overline{R}$ |
| (iii) \overline{LOCK} | (iv) \overline{DEN} |
| (v) \overline{TEST} | (vi) INTR |
| (vii) HOLD | (viii) ALE |
| (ix) QS_0 | (x) $\overline{RQ}/\overline{GT}$ |
| (xi) MN/\overline{MX} | (xii) NMI |

Or

Draw and discuss a typical maximum mode 8086 system.

Unit-II

2. (A) What is meant by addressing mode ? 2
- (B) Can the MOV instruction transfer data directly between a source and destination that both reside in external memory ? 2
- (C) What is the difference between the jump and loop instructions ? 4

[2]

Code No. : B04-401

Or

Write 8086 assembly language program to add two 8-bit numbers.

(D) Explain the following instruction of 8086 : 12

- (i) PUSH (ii) POP
(iii) DAA (iv) CALL
(v) RET (vi) XCHG

Or

Explain the logical group of 8086 instructions with necessary examples.

Unit-III

3. (A) How many memory locations can be addressed with 14 address line ? 2
(B) What is the purpose of the $\overline{\text{BHE}}$ and A_0 pins on the 8086 microprocessor ? 2
(C) Bring out the differences between interfacing the memories with 8086 and 8088. 4

Or

Write short notes on dynamic RAM.

[3]

P. T. O.

Code No. : B04-401

- (D) Give the basic idea about 32 bit memory interface. 12

Or

Interface two 8K RAM chips and two 4K EPROM chips with 8088 so as to form a completely working system configuration.

Unit-IV

4. (A) Draw the status word when 8255 is operated in mode ? 2
(B) Write two important functions performed by 8279. 2
(C) Write difference between I/O mapped I/O and memory mapped I/O interfacing. 4

Or

Explain working of counter type A/D converter.

- (D) Draw and discuss architecture of 8279. 12

Or

Explain in detail about the interrupts and interrupt service routines of 8086.

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[4]

4/25