

F 4706

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Reg. No.....

Name.....

M.Sc. DEGREE (C.S.S.) EXAMINATION, JANUARY 2017

Third Semester

Faculty of Science

Branch : II—Physics A—Pure Physics

Elective : Bunch A—Electronics

PH3EA2—MICROELECTRONICS AND SEMI CONDUCTOR DEVICES

(2012 Admission onwards)

Time : Three Hours

Maximum Weight : 30

Part A

Answer any six questions.

Each question carries 1 weight.

1. Explain cache memory.
2. What are the advantages of memory mapped I/O ?
3. State the features of RAM.
4. Why is it not advisable to use reversed interrupt types in 8086 ?
5. Will the instruction that turns off the trace flag, betrace in the 8086 ?
6. Differentiate between micro controller and microprocessor.
7. List the counters with 8051 microcontroller.
8. Give the basic ideas of embedded systems.
9. Compare Schottkey barrier diode with a junction diode.
10. What is tunneling barrier ? Explain.

(6 × 1 = 6)

Part B

Answer any four questions.

Each question carries 2 weight.

11. Discuss the four control signals commonly used by 8085.
12. Draw and explain the memory structure of 8085.
13. Explain the various addressing modes of 8086.

Turn over

14. Describe the interrupt structure of 8051.
15. Explain internal memory organization of 8051.
16. What are the differences between segment registers and general purpose registers in 8086 ?

(4 × 2 = 8)

Part C

Answer all questions.

Each question carries 4 weight.

17. (a) Draw the organization of a 8085 based micro computer system and explain in detail. Explain the various addressing modes.

Or

- (b) Discuss the classification of the instruction set of intel 8085 and give their format.

18. (a) Draw the architectural block diagram of 8086 and explain the functions.

Or

- (b) Draw the complete interface of 8086 processor memory interface in minimum mode with the following specification :

(i) 16K of EPROM.

(ii) 32K of RAM.

19. (a) With the help of a neat diagram explain the architecture of 8051 microcontroller in detail. Discuss its flag register.

Or

- (b) Discuss the various timer modes available in 8051 microcontroller in detail.

20. (a) Bring out the energy band diagram of hetero junction materials and discuss the two dimensional electron gas.

Or

- (b) Bring out the ideal junction properties. Explain the non-linear effects on barrier height in detail.

(4 × 4 = 16)