18001845

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Reg. No.....

Name.....

M.Sc. DEGREE (C.S.S.) EXAMINATION, NOVEMBER 2018

Third Semester

Faculty of Science

Branch II : Physics (A)–Pure Physics

Elective : Bunch A : Electronics

PH 3EA2—MICROELECTRONICS AND SEMICONDUCTOR DEVICES

(2012 Admission onwards)

Time : Three Hours

Maximum Weight : 30

Part A

Answer any **six** *questions.*
Each question carries 1 *weight.*

1. What is virtual memory ? Explain.
2. What is DMA ? Explain.
3. State the significance of flash memory.
4. How it is possible to disable interrupts in 8086 ?
5. How many clock cycles will be required by 8086 to access a 16 bit word located at an even address ?
6. Give the register set of intel 8051 microcontroller.
7. Bring out the frequency measurement using microcontroller system.
8. What are the features of 8051 microcontroller ?
9. Write the characteristics of hetrojunction materials.
10. What is two dimensional electron gas ? Explain.

(6 × 1 = 6)

Part B

Answer any **four** *questions.*
Each question carries 2 *weight.*

11. Explain the various addressing modes in 8085 processor.
12. Draw and explain the memory structure of 8086.

Turn over

13. Explain the various addressing modes of 8051.
14. Explain the I/O port structure of 8051.
15. Obtain the current voltage characteristics of a Schottly diode.
16. How can an I/O pin can be both an input and output in 8051 ?

(4 × 2 = 8)

Part C

Answer **all** *questions.*
Each question carries 4 *weight.*

17. (a) Draw and explain the timing diagram for memory read operation of 8085 processor.

Or

(b) Explain how the memory can be interfaced with the intel 8085 microprocessor.

18. (a) Compare 8086 and 8088 processors.

Or

(b) Draw the 8087 internal architecture and explain.

19. (a) Describe the interrupt structure of 8051 in detail.

Or

(b) Discuss the instruction set of 8051 microcontroller with appropriate example.

20. (a) Discuss the metal semi conductor ohmic contact system. Explain tunneling barriers and non rectifying barriers.

Or

(b) Give a detailed account on hetrojunctions and materials with energy band diagram.

(4 × 4 = 16)