

(Pages : 3)

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Reg. No. :

Name :

Fourth Semester M.Sc. Degree Examination, March 2021

Physics

Special Paper II

PH 243 E : ADVANCED ELECTRONICS II

(2018 Admission Onwards)

Time : 3 Hours

Max. Marks : 75

PART – A

Answer **any five** questions. Each question carries **3** marks.

- I. (a) List the addressing modes of the microprocessor 8086.
- (b) Write a short note on Direct Memory Access (DMA) controller.
- (c) Briefly discuss about advanced microprocessors 80186 and 80188.
- (d) Write a short note on the embedded processor families.
- (e) Briefly explain about rule based expert AI systems.
- (f) Write a short note on neuro fuzzy systems.
- (g) Briefly discuss about Pulse and Doppler Radars.
- (h) Write a short note on universal synchronous receiver/transmitter.

(5 × 3 = 15 Marks)

P.T.O.



PART – B

Answer **all** questions from II to IV. Each question carries **15** marks.

- II. A. Discuss instruction sets for data movement and arithmetic and logic operations in microprocessor 8086. Give two examples for each.

OR

- B. Draw the function block diagram of programmable interrupt controller 8259 A and discuss about it working.

- III. A. (a) Discuss the basic hardware units present in an embedded system. **7**
(b) Give one example each for small, medium and sophisticated embedded systems. **8**

OR

- B. (a) Briefly discuss about the basic concepts of artificial neural networks and its architecture. **5**
(b) What are ADALLINE and MADALINE networks. **5**
(c) List out two advantages and disadvantages of artificial neural networks. **5**

- IV. A. (a) Discuss about satellite orbits and Geosynchronous satellites. **7**
(b) Briefly Explain about satellite system link models and link equation. **8**

OR

- B. (a) Briefly explain about Error detection and error control in data communication system. **7.5**
(b) Explain about error correction and retransmission of data. **7.5**

(3 × 15 = 45 Marks)



PART – C

Answer **any three** questions. Each question carries **5** marks.

- V. (a) Write an assembly language program using 8086 microprocessor to find the first 5 Fibonacci numbers sequentially placed in successive memory locations.
- (b) Write an assembly language program for finding the sum of two 16 bit numbers using 8085 microprocessor.
- (c) Briefly explain the following microprocessor instructions with a suitable example for each (i) XCHG (ii) MOV (iii) LEA (iv) CMP (v) LDS.
- (d) Assume that we want to recognize 8-bit pattern in real time using a trained neural network. Which paradigm is recommended if the pattern is serial and parallel.
- (e) In a satellite communication system, a total transmit power (P_t) of 1000 W, determine the energy per bit (E_b) for a transmission rate of 50 Mbps.
- (f) Briefly discuss about LORAN and DECCA navigation systems.

(3 × 5 = 15 Marks)

