

(Pages : 3)

V – 5443

Reg. No. :

Name :

Fourth Semester M.Sc. Degree Examination, June 2025

Physics

Special Paper II

PH 243 E : ADVANCED ELECTRONICS II

(2020 Admission Onwards)

Time : 3 Hours

Max. Marks : 75

PART – A

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

1. Write a short note on data movement instructions in 8086 microprocessor.
2. Briefly discuss about 8257 DMA controller.
3. What is an embedded system?
4. Write a short note on problem solving in AI.
5. Briefly discuss about any three characteristics of neural networks.
6. What are LORAN and DECCA systems?
7. What is equivalent noise temperature in satellite communication systems?
8. What is universal product code?

(5 × 3 = 15 Marks)

P.T.O.



PART – B

Answer **all** questions. Each question carries **15** marks.

9. (a) Discuss different addressing modes of 8086 microprocessor.
(b) Write an 8086-assembly language program to convert BCD to ASCII.

OR

10. (a) Explain the block diagram of the 8279 Keyboard/Display interface and its operations.
(b) Distinguish between microprocessor and microcontrollers.
11. (a) Give a brief note on modelling of an artificial neuron.
(b) Explain about neural network architectures explaining about different types of networks.

OR

12. (a) Write a short note on knowledge representation in AI.
(b) Explain on the following search methods used in AI and their advantages: breadth-first-search, depth-first search, and heuristic search.
13. (a) Briefly discuss about satellite classification, spacing and frequency allocation.
(b) Explain bar coders.

OR

14. Give a brief account of the following:
(a) Pulse and Doppler Radars
(b) Radar transmitters and receivers.

(3 × 15 = 45 Marks)



PART – C

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

15. Write an 8086-assembly language program for adding two 16-bit binary numbers.
16. In a system with an 8279 programmable keyboard/display interface operating in Scan Keyboard Mode, a keyboard with 8 rows and 6 columns is connected. The clock frequency is 4 MHz, and each row scan takes 750 microseconds. Calculate the time interval between two consecutive interrupts generated by the keyboard/display interface when a key is pressed.
17. Write a LISP program to convert centigrade temperatures to Fahrenheit.
18. What are the three lowest blind frequencies of the radar when it is operating at 10 GHz with a pulse repetition frequency 1.0 kHz.
19. For an earth station transmitter with an output power of 10,000W, a back-off loss of 3 dB, a total branching and feeder loss of 3 dB and transmit antenna gain of 40 dB, determine the Effective Isotropic Radiation Power (EIRP).
20. What is the ASCII code for the word "Test"?

(3 × 5 = 15 Marks)

