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R – 6583

Reg. No. :

Name :

Fourth Semester M.Sc. Degree Examination, July 2023

Physics

Special Paper – II

PH 243 E : ADVANCED ELECTRONICS – II

(2020 Admission Onwards)

Time : 3 Hours

Max. Marks : 75

SECTION – A

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

1. Compare DMA controlled data transfer and microprocessor controlled data transfer.
2. Make a note on 8251 USART.
3. Outline some of the features of 80386 processor.
4. Explain any two applications of neural networks.
5. Compare and Contrast Prolog and Lisp.
6. Discuss three applications of radar.
7. Give the equation for Doppler frequency shift in the case of a radar and plot it.
8. Discuss the LORAN navigator system.

(5 × 3 = 15 Marks)

P.T.O.



SECTION – B

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

9. Explain minimum and maximum mode of 8086 with the aid of a neatly drawn pin diagram of the processor chip. Discuss functions of pins common to both modes.

OR

10. Give the internal block diagram of 8279 and discuss the various sections.
11. What are informed search algorithms? Explain the A* search algorithm in detail with an example.

OR

12. What are embedded systems? Explain with two examples in detail.
13. Describe satellite link models and beams.

OR

14. Make a brief note on character synchronisation and data communication hardware.

(3 × 15 = 45 Marks)

SECTION – C

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

15. Given that BX = 2500H, SI = 5000H, Displacement = 1000H, IP = 2000H. Determine the effective address for the following addressing modes:
- (a) Base
 - (b) Index
 - (c) Base index
 - (d) Base index relative.
16. Write a 8086 assembly language program for 16 bit subtraction.



17. Write a program to multiply two signed numbers.
18. Explain how OR gate can be realized with a perceptron using perceptron learning algorithm to train it.
19. Make a note on bar codes, with emphasis on code 39.
20. For a total transmit power (P_t) of 750 W, determine the energy per bit (E_b) for a transmission rate of 20 Mbps.

(3 × 5 = 15 Marks)

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