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J – 4867

Reg. No. :

Name :

Fourth Semester M.Sc. Degree Examination, May 2020

Physics

Special Paper – II

PH 243 E : ADVANCED ELECTRONICS – II

(2018 Admission)

Time : 3 Hours

Max. Marks : 75

PART – A

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

- I. (a) List the segment registers of 8086.
- (b) What are the functions performed by 8251?
- (c) What are the functional requirements of an embedded system?
- (d) What are the basic characteristics of an expert system?
- (e) What do you mean by learning in neural network?
- (f) Explain the term blind speed.
- (g) Draw the satellite transponder system.
- (h) List the components of a data communication system.

(5 × 3 = 15 Marks)

P.T.O.



PART – B

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

- II. (A) Describe Intel 8086 Microprocessor Architecture with diagram.

OR

- (B) Explain the block diagram of the 8279 Keyboard/Display interface and its operations.

- III. (A) Discuss the structural units in embedded processor and how a processor is selected for an embedded application.

OR

- (B) Explain the important ANN parameters.

- IV. (A) Explain the working of pulse radar system with block diagram.

OR

- (B) Derive Friis transmission equation for satellite communication.

(3 × 15 = 45 Marks)

PART – C

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

- V. (a) Write an assembly language program using 8086 to add two 16 bit numbers in BX and CX registers and store the result in locations with offset of [1600].
- (b) Write the size of physical memory and virtual memory of 8086 microprocessor.



- (c) Assume that we want to recognize 8 bit pattern in real time using a trained neural network. Which paradigm would you recommend if the pattern is serial and parallel?
- (d) What are the three lowest blind frequencies of the radar when it is operating at 10 GHz with a PRF of 1.0 kHz.
- (e) If a radar operates at a peak power of 50KW with a pulse width of 0.8 ms and at PRF of 1000 Hz, then find the average power.
- (f) Calculate the gain of a 3 m paraboloidal antenna operating at a frequency of 12GHz. Assume an aperture efficiency of 0.55.

(3 × 5 = 15 Marks)

