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G – 5249

Reg. No. :

Name :

Fourth Semester M.Sc. Degree Examination, September 2019

Physics

Special Paper II

PH 243 E: ADVANCED ELECTRONICS II

(2014 Admission onwards)

Time : 3 Hours

Max. Marks : 75

PART – A

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

- I. (a) What are the predefined Interrupts in 8086 microprocessor?
- (b) What are the functions of Bus Interface Unit (BIU) in 8086 microprocessor?
- (c) List the objectives of AI research.
- (d) Explain the basic characteristics of an expert system.
- (e) Compare the performance of computer and a biological neural network.
- (f) Explain the term blind speed of MTI radar.
- (g) Define and explain the term EIRP of satellite link.
- (h) What is aspect ratio in TV system?

(5 × 3 = 15 Marks)

P.T.O.



PART – B

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

- II. (a) Explain the architecture of the 8086 microprocessor. Also mention the important features.

OR

- (b) Discuss the various addressing modes present in 8086 microprocessor.

- III. (a) Draw the ideal architecture of expert system and explain.

OR

- (b) Discuss different neural network architectures and their applications.

- IV. (a) Derive Friis transmission equation for satellite communication and discuss its significance.

OR

- (b) Explain the working of DECCA system with diagram. List the salient features.

(3 × 15 = 45 Marks)

PART – C

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

- V. (a) Write an assembly language program using 8086 processor to find the 2's complement of a 16 bit number and store the result at 1500 location.
- (b) Write an assembly language program using 8086 processor to add two 16 bit numbers in BX and CX registers and store the result in location with offset of [1600].



- (c) During learning of a perception, the input is I , the target output is T , the obtained output is O , and the nonlinearity function is F . Express the error signal.
- (d) Calculate the band width for a TV system in which horizontal resolution=520 and scanning time for one line = $52 \mu s$.
- (e) A radar operates at a PRF of 1000Hz with a pulse width of $2 \mu s$ and at an average power of 100W. Find peak power and duty cycle.
- (f) A satellite down link at 12GHz operates with a transmit power of 6W and an antenna gain of 48.2dB. Calculate the EIRP in dBW.

(3 × 5 = 15 Marks)

