



(Pages : 2)

E – 3871

Reg. No. :

Name :

Fourth Semester M.Sc. Degree Examination, July 2018
Branch : Physics
Special Paper – II
PH 243 E : ADVANCED ELECTRONICS II
(2014 Admission)

Time : 3 Hours

Max. Marks : 75

PART – A

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

- I. a) List the salient feature of 80386.
- b) What are the important applications of embedded systems ?
- c) Distinguish between ADALINE and MADALINE networks.
- d) What is artificial neural network ?
- e) What is artificial intelligence ?
- f) What is geostationary orbit ? Pictorially represent geostationary arc.
- g) What is the basic principle of radar system ?
- h) Schematically represent a TV camera setup.

PART – B

- II. A) Explain the architecture of 8086 microprocessor with suitable diagram. **15**
- OR
- B) a) How do you interface D/A converter with 80186 microprocessor ? **8**
- b) Describe the components of a simple microcontroller with embedded system. **7**

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E – 3871



III. A) a) Write a note on robotics. 5

b) Explain various parts of robots with neat diagram. 10

OR

B) a) Write an essay on Fuzzy expert system, Fuzzy quantifier. 7

b) What are the engineering application of Fuzzy logic ? 8

IV. A) a) Give the theory of pulse radar. 7

b) Describe a pulse radar system with block diagram. 8

OR

B) a) Discuss the TV reception system. 7

b) Write a note on colour television system. 8

PART – C

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

V. a) What value does the unsigned word integer 1100_{16} and signed word integer equals $FEFE_{16}$ represent ?

b) How should pointer with the segment base address equal to $A000_{16}$ and offset address $55FF_{16}$ be stored at an even address boundary starting at 0006_{16} , represent schematically ?

c) Lukasiewicz's multivalued or Fuzzy logic (L_1) uses a continuous valued truth function $t : S \rightarrow [0,1]$ defined on the set S of statements.

d) With a transmit frequency of 5GHz. Calculate the Doppler frequency seen by a stationary radar when the target radial velocity is 100 km/hr (62.5mph).

e) In a satellite communication channel the uplink C/N ratio is 88 dB Hz, downlink value is 78 dB Hz. Calculate the overall C/N_0 ratio.

f) Deduce the range equations of radar. (3x5=15 Marks)
