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ELS 505

**Third Semester M.Sc. Degree Examination, Dec. 2018/Jan. 2019
(CBCS Scheme)
ELECTRONICS
Microwave Engineering**

Time : 3 Hours

Max. Marks : 70

PART – A

Answer **all** questions.

(5×2=10)

1. a) State the principle of transferred electron effect.
- b) Mention applications of IMPATT diodes.
- c) Define Radar and mention its applications.
- d) Define transponder and list the antenna subsystems used in satellite communication.
- e) What are the advantages of satellite communication ?

PART – B

Answer **any 3 full** questions :

(3×20=60)

2. a) Explain the process of velocity modulation and bunching in a reflex klystron oscillator with the help of diagram. **10**
- b) Describe the principle of operation of IMPATT diode. Compare it with TRAPATT diode. **10**

OR

3. a) State and explain Gunn effect. What are the criteria that a semiconductor must satisfy in order to exhibit negative resistance ? **10**
- b) Compare the multicavity Klystron and TWT from the point of basic construction, performance and applications. **10**

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- 4. a) With a neat block diagram explain the operation of Radar. **10**
- b) Write a note on pulsed radar system. **10**

OR

- 5. a) Explain the factors affecting the range of Radar. **10**
- b) Give an account on Radar antennas and its applications. **10**
- 6. a) Explain the attitude control of satellite with necessary diagram. **10**
- b) State and explain the Kepler's three laws of planetary motions. **10**

OR

- 7. a) Write a note on uplink and downlink budget calculations. **10**
- b) Explain the different types of noise exist in the design of satellite communication system. **10**
