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VI-Semester  
MID SEMESTER EXAMINATION

Roll. No.-----  
B.Tech (EP)  
March-2019

EP306 Microwave Engineering

Time: 1:30 Hours

Max. Marks: 30

Note: Answer all question.  
Assume suitable missing data, if any.

1. Define a microwave junction. How can it be described by scattering matrix? Derive the scattering matrix relation between the input and output of  $n \times n$  junction starting with an analogy of a transmission line junction. (5)
2. A signal of power 32 mW is fed into one of the collinear ports of a lossless H- plane Tee. Determine the powers in the remaining ports when other ports are terminated by means of matched loads. (5)
3. Explain the action of isolator and gyrator using ferrite. Mention their typical application. (5)
4. Explain the operation, construction and application of TRAPATT diode. (5)
5. An IMPATT diode has a drift length of  $2 \mu\text{m}$ . Determine the operating frequency of the IMPATT diode if the drift velocity for Si is  $10^7$  cm/sec. (5)
6. Write short note of any two on following: (5)  
(a) Avalanche transit time (b) waveguide Irises and (c) Gunn diode.

END