

**B.Tech. SEM -VII Electronics 2014 Course (CBCS) : WINTER - 2018**

**SUBJECT- ADVANCED COMMUNICATION SYSTEMS**

Day: Friday  
Date: 30/11/2018

Time: 02.30 PM TO 05.30 PM  
Max. Marks: 60

**W-2018-2557**

**N.B.:**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Assume suitable data, if necessary.

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- Q.1** a) Classify microwave devices and explain any one in detail. (05)  
b) Explain in brief modes of transmission in waveguide. (05)  
**OR**
- a) What are the applications of microwave frequencies? (05)  
b) Briefly explain excitation of modes in waveguides. (05)
- Q. 2** Derive an expression for G/T ratio. (10)  
**OR**
- a) Explain in detail the Look angle determination in satellite communication. (05)  
b) How is the performance of satellite impaired due to the external factors? (05)
- Q. 3** Derive the equations for satellite link design. (10)  
**OR**  
Explain in detail the applications of satellite systems. (10)
- Q.4** Derive an expression for radar range equation. (10)  
**OR**
- a) With a neat block diagram, discuss pulsed radar system. (06)  
b) Enumerate the operation of Doppler radar system. (04)
- Q. 5** Explain in detail the principal and operation of OFDM demodulator. (10)  
**OR**
- a) List the functional components of cognitive radio architecture and explain primary functions of cognitive radio. (05)  
b) With suitable diagram, describe the OFDM modulator. (05)
- Q. 6** a) Enumerate the quality of service of mobile telephone. (05)  
b) Describe in detail the operation of MTSO. (05)  
**OR**  
What are the different transmission protocols? Explain it. (10)  
Compare 2G, 3G and 4G mobile services.

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