

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
M.Sc., Summer 2018-19 Examination

Semester: 4
Subject Code: 11204252
Subject Name: Electronic communication-II

Date: 03/04/2019
Time: 02:00 pm to 04:30 pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1. A) Brief note (4x2) (Each of 04 marks) (08)**
- (a) What is waveguide? Write a note on rectangular waveguide.
 - (b) Write a note on circular waveguide.
- Q.1. B) Answer the following questions (Any two) (04)**
- (a) Brief note (2x2) (Each of 02 marks) (04)
 1. Write any two advantages of waveguides
 2. Write a note on circular waveguide.
 - (b) It is necessary to propagate a 10GHz signal in a waveguide whose wall separation is 6cm. (04)
 What is greatest number of half wave of electric intensity which it will be possible to establish between the two walls? Calculate the guide wavelength for this mode of propagation?
 - (c) Write any four applications of waveguide. (04)
- Q.2. A) Answer the following questions. (04)**
- (a) Short note. (Each of 02 marks) (04)
 1. Draw radiation pattern for resonant dipole.
 2. Write any two applications of antenna.
 - (b) Write a note on antenna parameters. (04)
- Q.2. B) Answer the following questions (Any two) (03)**
- (a) Short note (Each of 01 marks) (03)
 1. Define the term dipole in antenna.
 1. The waveguide is employed in the transmission lines, when operated at the range of _____
 2. the modes of propagation supported by a rectangular wave guide is _____
 - (b) A half wave dipole antenna is capable of radiating 1-kW and has a 2.15dB gain over an isotropic antenna. how much power must be delivered to the isotropic antenna to match the field strength directional antenna? (03)
 - (c) Write a note on log-periodic antenna. (03)
- Q.3. A) Essay type (Each of 04 marks) (08)**
- (a) Draw the block diagram of AM radio receiver.
 - (b) Write a note on image frequency and its rejection.
- Q.3. B) Answer the following questions (Any two) (04)**
- (a) Short note (Each of 02 marks) (04)
 1. Write a short note on frequency mixers.
 2. Define frequency gain.
 - (b) Write a note on Noise in AM receiver. (04)
 - (c) Write a note on detection and automatic gain control. (04)
- Q.4. A) Answer the following questions. (04)**
- (a) Short note. (Each of 02 marks) (04)
 1. Write the names of radar performance factors.
 2. Write a note on Radar Beacons.
 - (b) Explain basic principles of RADAR. (04)
- Q.4. B) Answer the following questions (Any two) (03)**
- (a) Short note. (Each of 01 marks) (03)
 1. Define Doppler Effect.
 2. Write any two applications of RADAR.
 3. Write the full form of RADAR.
 - (b) Write a note on pulsed radar system. (03)
 - (c) Explain Moving target indication (MTI). (03)