

Antenna & Wave Propagation

[REVISED COURSE]

CON/4856-06.

YM-7150

(3 Hours)

[Total Marks : 100]

N.B. [1] Question No.1 is compulsory

[2] Answer any four out of remaining six questions

[3] Assumptions made should be clearly stated

[4] Assume any suitable data wherever required but justify the same

[5] Figures to the right indicate marks

[6] Illustrate answer with sketches wherever required

[7] Answer to questions should be grouped and written together

[8] Use a blue/black ink pen to write answers. Use of pencil should be done only to draw sketches and graphs

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| 1. Explain the following:- | 20 |
| (a) Friis transmission equation, | |
| (b) Maxwell's equations. | |
| (c) Ground effects and their applications, | |
| (d) Planar array and their applications, | |
| (e) Loop antennas. | |
| 2. (a) Explain the basic antenna parameters. | 10 |
| (b) Retarded potentials and their importance. | 10 |
| 3. (a) Wire antennas and their specific applications, | 10 |
| (b) End fire vs Broadside arrays. | 10 |
| 4. (a) Travelling wave antennas and their applications, | 10 |
| (b) Log periodic antennas vs Aperture antennas. | 10 |
| 5. Various reflector antennas and their applications. | 20 |
| 6. Types of microstrip antennas and their characteristics. | 20 |
| 7 Explain different microwave propagation methods and their effects. | 20 |