

Seat
No.

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DFI1348

Radiation & Microwave Techniques (New) (1210)

P. Pages : 2

Time : Three Hour

Max. Marks : 100

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Solve **any two** sub questions from each unit.
5. Assume suitable data wherever necessary.
6. Solve **all** questions.

UNIT - I

1.
 - a) What do you mean by impedance matching ? What is stub matching. 10
 - b) What is Smith Chart ? How it is advantages for transmission line design ? 10
 - c) Derive and explain transmission line equation. 10

UNIT - II

2.
 - p) Prove that the cut - off frequency of rectangular wave guide is.

$$f_c = \frac{1}{2\sqrt{\mu\epsilon}} \sqrt{\left(\frac{m}{a}\right)^2 + \left(\frac{n}{b}\right)^2} \quad \text{10}$$

- q) Compare rectangular wave guide and circular wave guide.
Why TEM wave can not propagate through a rectangular wave guide ? 10
 - r) Write short notes on. 10
 - i) Directional coupler.
 - ii) Magic tee.

UNIT - III

3. a) Draw and explain travelling wave tube with applications. 10
- b) Draw and explain Reflex Klystron with its performance characteristics. 10
- c) Write short notes on : 10
- i) Monolithic microwave strip line devices.
 - ii) GUNN diode.

UNIT - IV

4. p) Draw and explain parabolic reflector with all types of feeding methods. 10
- q) Explain methods for measurements of VSWR. 10
- r) Explain in detail. 10
- i) Horn antenna.
 - ii) Slotted antenna.

UNIT - V

5. a) Derive the radar range equation. Discuss factors affecting on radar range. 10
- b) Explain principle and working of MTI radar give its uses over other radar system. 10
- c) Explain principle and working of microwave oven. 10
