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Name of Examination : **Summer 2021** - (Preview)

Course Code & Course Name : **ET452 - Microwave Engineering and Fiber Optics**

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Maximum Marks : **60**   Duration : **3 Hrs**

Edit Print View Answer Key Close **Answer Key Submission Type:** Marking scheme with model answers and solutions of numerical

Instructions:

1. *All questions are compulsory.*
2. *Illustrate your answer with suitable figures/sketches wherever necessary.*
3. *Assume suitable additional data; if required.*
4. *Use of logarithmic table, drawing instruments and non programmable calculators is allowed.*
5. *Figures to the right indicate full marks.*

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1)   **Solve any two sub questions.**

A) Explain the term reflection coefficient and transmission coefficient. How they are related to each other.   [6]

B) Derive & explain Transmission Line equation.   [6]

C) What is Smith Chart? Explain it in detail.   [6]

2)   **Solve any two sub questions.**

A) Derive the expression for [S] Matrix for H Plane tee.   [6]

B) Describe the operation of two hole directional coupler, also explain various performance   [6]
Parameters of directional coupler.

C) With the help of neat diagram, explain working of Isolator.   [6]

3)   **Solve any two sub questions.**

A) Explain low and high VSWR measurement technique.   [6]

B) Explain Frequency measurement techniques using   [6]
   i) Frequency meter.
   ii) Slotted line.

C) Enlist different methods adopted for measurement of microwave power. Explain low power measurement by using thermistor or barretters.   [6]

4)   **Solve all sub questions.**

A) Explain Fiber attenuation measurement with suitable block diagram.   [6]

B) Explain step index and graded index fibers.   [6]

5)   **Solve all sub questions.**

A) With detail block diagram of OFC explain it with advantages and disadvantages.   [6]

B) Draw I (Current)/P(Power) characteristics of LED and LASER. Compare LED and LASER with reference to following point   [6]
   i) Output power
   ii) Linearity
   iii) Thermal effect
   iv) Response
   v) Spectral width

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