

QP CODE: 20100933



Reg No :

Name :

B.Sc DEGREE (CBCS) EXAMINATION, MARCH 2020
Fourth Semester
B.Sc Electronics Model III
Core Course - EL4CRT11 - MICROWAVE ELECTRONICS
2017 Admission onwards
3B081F9A

Time: 3 Hours

Marks: 80

Part A

Answer any ten questions.

Each question carries 2 marks.

1. Give names and frequencies of microwave bands.
2. Give the relation between reflection coefficient and VSWR.
3. What do you mean by TM mode?
4. What do you mean by cut-off frequency of a waveguide?
5. What is the physical interpretation of phase velocity of a waveguide?
6. Explain microwave twists.
7. Microwave oven is a cavity resonator. Justify.
8. What is a microwave circulator?
9. What are the limitations of conventional electronic devices based on vacuum tubes?
10. Explain the structure of a Gunn diode
11. What do the acronym IMPATT stands for?
12. What is a microwave PIN diode?

(10×2=20)

Part B

Answer any six questions.

Each question carries 5 marks.

13. Discuss the various advantages of microwaves
14. Explain the various components associated with a two wire transmission line.





15. Find the dominant mode cut off frequency of TE waves.
16. Explain different impedance matching techniques used with waveguides.
17. What is a rat race? Explain.
18. Explain the operation of a Faraday rotation ferrite isolator.
19. Explain with a neat diagram the working of a multi-cavity klystron amplifier.
20. What is a Magnetron. What are its practical considerations?
21. Explain the construction and characteristics of a varactor diode.

(6×5=30)

Part C

Answer any two questions.

Each question carries 15 marks.

22. Explain the various types of transmission lines. Discuss their merits and demerits.
23. Discuss the different types of wave guides and their structure. Explain their applications.
24. Draw the structure of a two-hole wave guide directional coupler and explain its working and applications.
25. With necessary diagrams explain the construction and working of a reflex Klystron oscillator.

(2×15=30)

