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| **Academic/1** |

**MADAN MOHAN MALAVIYA UNIVERSITY OF TECHNOLOGY**

**B.Tech. [SEM I (ITCA only)]**

**ASSIGNMENT SHEET-2**

***(Session: 2021-22)***

**INTRODUCTION TO ELECTRONICS ENGINEERING  
(BEC-105)**

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| **Unit:1** | **Topic: BJT** |
| **Date of Distribution: 15/02/2022**  **Date of Submission: After Minor Test** | **Name of Faculty: Dr. Shagun Pal** |

1. Discuss the need for biasing in the transistor.
2. Why transistor is called the current controlled device?
3. How alpha & beta are related to each other in BJT.
4. Explain PNP & NPN transistor with the symbolic representation.
5. Explain how BJT is used as an Amplifier.
6. Explain the Input & Output characteristics of the CE configuration.
7. Define and explain the h – parameter of the BJT.
8. Why do the Output characteristics of a CB transistor have slight upward slope?
9. Define what is current amplification factor CE, CC, CB Configuration?
10. What do you understand by collector reverse saturation? In which configuration does it have a greater value?
11. Explain the term concept of early effect. How does it occur?
12. Explain about the current gain in BJT.
13. Why Collector current configuration is called Voltage Buffer?
14. What do you understand by collector Reverse saturation? In which configuration does it have a greater value.
15. Derive the expression of the current amplification (alpha) of common base configuration.
16. Explain why Iceo >> Icbo ?
17. Why common collector configuration is called a Voltage Buffer.
18. Compare the Biasing circuit of CB, CE & CC Configuration of BJT & find out expression of the (alpha), (beta) & (gamma) in each case.

Numerical which is taught in the class. (online)( Compulsory)

References:

*1. Robert L. Boylestand / Louis Nashelsky “Electronic Devices and Circuit Theory”, Latest Edition, Pearson Education.*

*2. H S Kalsi, “Electronic Instrumentation”, Latest Edition, TMH Publication.*

*3. George Kennedy, “Electronic Communication Systems”, Latest Edition, TMH.*

*4. David A. Bell, “Electronic Devices and Circuits”, Latest Edition, Oxford University Press.*

*5. Jacob Millman, C.C. Halkias, Staya brataJit, “Electronic Devices and Circuits”, Latest Edition, TMH.*