

4132 - BASIC ELECTRONICS (4102, 4212)										
Teaching Schedule Per Week			Progressive Assessment		Examination Schedule (Marks)					
					Theory		Practical Ex.		Total	
Lectures	Practical	Credits	25	25	3 Hrs	100	50	200		
3	4	7	Semester		Theory	Test	Total	TW	PR	Gr Total
Pre-requisite		Source			75	25	100	25	50	175
Nil		EXN								

CB configurations phase relationships, comparison of the three amplifier configurations. (Derivations not Expected). Simple calculations.

### 3. FIELD EFFECT TRANSISTORS

5 10

JEET: Structure, n channel and channel JFET, operation characteristics comparison with BJT, important JFET parameters, JFET biasing circuits. MOSFET: Structure, operation and characteristics of enhancement and depletion of type MOSFET. Comparison with JFET. Application of JFET and MOSFET in brief.

### 4. VACCUUM TUBES

5 10

Brief explanation of various types of electron emission, thermionic, secondary, photoelectric, field, cathode materials, directly and indirectly heated emitters, construction, operation, characteristics, parameters of Vacuum diode, triode, Tetrode, pentode, and applications of vacuum tubes. Comparison of tubes and transistors. Simple calculations.

Total

48 100

### PRACTICALS (Any 12 of the following):

1. a) Static characteristics of a zener diode.
2. a) Zener as a regulator. wave rectifier with and without full load.  
b) Study of Half wave rectifier with capacitor filter with and without full load.
3. a) Study of Half 1. Forward and reverse characteristics of a junction diode.
4. a) Study of Full wave rectifier with and without full load.  
b) Study of Full wave rectifier with capacitor filter with and without full load.
5. a) Study of Bridge rectifier with and without full load.  
b) Study of Bridge rectifier with capacitor filter with and without full load.
6. Static input and output characteristics of BJT in CB configuration.
7. Static input and output characteristics of BJT in CE configuration.
8. a) Study of Fixed bias circuit with and without emitter resistance.  
b) Study of collector bias circuit.
9. a) Study of potential divider biasing circuit with emitter resistance.  
b) Study of potential divider biasing circuit with emitter resistance and bypass capacitor
10. Study of static characteristics of FET.
11. Study of common Emitter amplifier.
12. Study of static characteristic of MOSFET.
13. Study of characteristics of vacuum tube diode.
14. Study of characteristics of vacuum triode.
15. Study of characteristics of vacuum pentode.

### REFERENCE BOOKS:

1. Electronic Principles by Malvino.
2. Electronic Devices & Circuits by Allen Mottershead.
3. Electronic Devices and Circuit by Millman and Halkias.
4. Electronic Devices and Circuits by G.K. Mithal.
5. Basic Course in Electronics by Bhargava and Others, TTTI Publication.

