Branch	Electronics and Telecommunication Engineering		Semester	II

Course Code	CO3	Course Name		Basic Electronics	

Course Outcome 1	Student will be able to Explain the fundamental of semiconductor physics	Teach Hrs.	Marks
Learning Outcome 1	Able to Describe the basic of semiconductor material.(Cognitive)	08	10
Contents	Energy bands (conduction & valence), Effect of temperature on conductivity, Intrinsic & Extrinsic semiconductor		
Method of Assessment	Internal		
Learning Outcome 2	Able to Explain different concept of P-N Junction.(Cognitive)	08	10
Contents	Doping, P-type and N-type semiconductor, Concept of majority and minority carriers Concept of P-N junction, Diffusion & Drift, Barrier potential, Depletion region		
Method of Assessment	External		

Branch	Electronics and Telecommunication Engineering		Semester	II

Course Code	E03	Course Name	Basic Electronics		

Course Outcome 2	Student will be able to **Classify differentsemiconductor diodes.**	Teach Hrs.	Marks
Learning Outcome 3	Able to Illustrate various type of diode viz. PN junction, Zenerand Tunnel diode.**(Cognitive)**	07	10
Contents	PN Junction Diodes: Basic Structure and symbol - Forward & Reverse Biasing - V-I Characteristic Constructional features, characteristics, symbol and applications of – Zener Diode, Tunnel Diode		
Method of Assessment	External		
Learning Outcome 4	Able to Illustrate various type of diode viz.Schottky, Varactor, Photo Diode and LED.**(Cognitive)**	07	10
Contents	Constructional features, characteristics, symbol and applications of – Schottky Diode, Varactor Diode, Photo Diode, LED.		
Method of Assessment	Internal		
Learning Outcome 5	Able to Verify the V-Icharacteristics of diode. **(Psychomotor)**	08	10
Contents	Plot the V-I characteristics of a Silicon Diode, Germanium Diode and Zener Diode using Trainer-Kit/breadboard and/or Simulation Software and Verify it		
Method of Assessment	External		

Branch	Electronics and Telecommunication Engineering		Semester	II

Course Code	E03	Course Name	Basic Electronics

		Teach Hrs.	Marks
Course Outcome 3	Student will be able to Categorize diode rectifiers, filters and multipliers.		
Learning Outcome 6	Able to Constructdifferent diode based circuit with different parameters. **(Cognitive)**	07	10
Contents	Need of rectification, Types of rectifier-Half Wave, Full Wave and Bridge rectifier, Comparison, Average, Peak and RMS Values, Ripple factor, PIV of diode used in rectifier circuits, Rectifier efficiency.		
Method of Assessment	External		
Learning Outcome 7	Able to Explain operation of filters and multiplier circuits. **(Cognitive)**	08	10
Contents	Need of Filter Circuits, Types of filter circuits-capacitor, L- type and pie type, comparison of filters Basics of Voltage multiplier - Doubler and Tripler, Clipper- Series and Shunt, Clamper- Positive and Negative.		
Method of Assessment	External		
Learning Outcome 8	Able to Assemble the circuit and verify the waveform of rectifiers. **(Psychomotor)**	08	15
Contents	Assemble / setup the circuit of Half Wave rectifier, Full Wave rectifiersand Bridge rectifier on Trainer-Kit/breadboard and/or Simulation Software and verify the output waveform.		
Method of Assessment	Internal		

Branch	Electronics and Telecommunication Engineering		Semester	II

Course Code	E03	Course Name	Basic Electronics

Course Outcome 4	Student will be able to Compare different bipolar junctiontransistors	Teach Hrs	Marks
Learning Outcome 9	Able to Classify different BJT and its configuration.**(Cognitive)**	07	10
Contents	Basic Structure, Types of Bipolar Junction Transistor (BJT): PNP & NPN transistors, Transistor action, Check and identify the transistor leads. Transistor Configurations - CE, CC and CB mode. Comparison between three configurations.		
Method of Assessment	External		
Learning Outcome 10	Able to Illustrate thecharacteristic of BJT. **(Cognitive)**	07	10
Contents	V -I characteristics of Bipolar Junction Transistor (BJT) - Input and Output Characteristics, Regions of Transistor operation - active, saturation & cutoff, DC current gains- Alpha (α) and Beta (β), relation between alpha & beta, Transistor as a Switch.		
Method of Assessment	External		
Learning Outcome 11	Able to Plot the input and output characteristics of BJT for different configuration. **(Psychomotor)**	08	10
Contents	Setup the BJT for CE, CB and CC configuration circuit and obtain input and output characteristicsusing Trainer-Kit/breadboard and/or Simulation Software and Verify it.		
Method of Assessment	External		

Branch	Electronics and Telecommunication Engineering		Semester	II

Course Code	E03	Course Name		Basic Electronics

Course Outcome 5	Classify different type of field effect transistors (FET)	Teach Hrs	Marks
Learning Outcome 12	Able to Explain the working principle of FETs. **(Cognitive)**	07	10
Contents	Types of FET, Comparison of FET with BJT, FET:Operation, V -I characteristic, Pinch-off voltage, MOSFET- Depletion and Enhancement type		
Method of Assessment	External		
Learning Outcome 13	Able to Define CMOS, MESFET and UJT. **(Cognitive)**	07	10
Contents	Introduction to CMOS and MESFET. UJT (Unijunction Transistor) - Structural diagram of UJT, working of UJT, UJT as relaxation oscillator		
Method of Assessment	Internal		
Learning Outcome 14	Able to Verify the characteristic of FETs and UJT.**(Psychomotor)**	08	15
Contents	Assemble the circuit and plot V-I characteristic of FET, MOSFET and UJT On Trainer-Kit/breadboard and/or Simulation Software and Verify it.		
Method of Assessment	Internal		

SuggestedListofExperiments:

S.N.	Experiment
1.	To plot the V-I characteristics of a Silicon Diode
2.	To plot the V-I characteristics of a Germanium Diode
3.	To verify the V-I characteristics of Zener Diode.
4.	To setup the circuit and verify the waveforms of Half Wave rectifier.
5.	To setup the circuit and verify the waveforms of Full Wave rectifiers.
6.	To setup the circuit and verify the waveforms of Bridge rectifier
7.	To obtain the input and output Transistor Characteristics for CE configuration.
8.	To obtain the input and output Transistor Characteristics for CB configuration.
9.	To obtain the input and output Transistor Characteristics for CC configuration.
10.	To verify the V-I Characteristics of FET
11.	To verify the V-I Characteristics of UJT.
12.	To verify the V-I Characteristics of MOSFET

ReferenceBooks/WebPortals:

S.N.	Title	Author
1.	Electronic Devices & CKTs	Mottershead
2.	Electronic Devices & Circuits	Robert Boylestad
3.	Electronic Devices and Circuits	Millman&Halkias
4.	A Text book of Applied Electronics	R.S. Sedha, S. Chand &Co.New Delhi
5.	Principals of Electronics	Latest ,V.K.Mehta , S.Chand Publication
6.	Electronics Principles	Malvino TMH
7.	Basic Electronics	B. L. Thareja

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code		Course Code			CO Code	LO Code	Format No. 4
		E	0	3	2	0	1	1	1

COURSE NAME	Basic Electronics
CO Description	Explain the fundamental of semiconductor physics
LO Description	Describe the basic of semiconductor material.

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-01	Energy bands (conduction & valence), Effect of temperature on conductivity, Intrinsic & Extrinsic semiconductor	Interactive classroom lecture, PPT, demonstration, quiz, assignments	Teacher will explain the contents and provide handouts to students. Teacher will conduct quiz/ assignments/ tutorial.	08	--	Text Books, PPT, Handouts, chalk board, charts.Videos lectures- NPTEL& others	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-01	Mid Semester Theory Exam	**Student will be asked to**(and/or): 1. List out various type of semiconductor and explain it. 2. Draw the energy band diagram of given material 3. Explain effect of temperature on conductivity of semiconductor.	10	Question paper, Rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code		CO Code	LO Code	Format No. 4
		E	0	3	2	0	1	1	2	

COURSE NAME	Basic Electronics
CO Description	Explain the fundamental of semiconductor physics
LO Description	Explain different concept of P-N Junction.

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-02	Doping, P-type and N-type semiconductor, Concept of majority and minority carriers Concept of P-N junction, Diffusion & Drift, Barrier potential, Depletion region	Interactive classroom lecture, PPT, demonstration, quiz,assignments, tutorial	Teacher will explain the contents and provide handouts to students. Teacher will conduct quiz/assignments/ tutorial to make students practice their knowledge.	08	--	Text Books, PPT, Handouts, chalk board, charts, Numerical Problems Workbook	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-02	End Semester Theory Exam	**Student will be asked to**(and/or): 1. What is doping? 2. Draw and explain the PN junction Diode. 3. Explain the concept of diffusion and drift.	10	Question paper, Rating scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		E	0	3	2	0	1	2	3	

COURSE NAME	Basic Electronics
CO Description	Classify different semiconductor diodes.
LO Description	Illustrate various type of diode viz. PN junction, Zenerand Tunnel diode.

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-03	**PN Junction Diodes:** Basic Structure and symbol - Forward & Reverse Biasing - V-I Characteristic Constructional features, characteristics, symbol and applications of – Zener Diode, Tunnel Diode	Interactive classroom lecture, PPT, demonstration, quiz,assignments, tutorial	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	07	--	Text Books, PPT, Handouts, chalk board, charts, Video lecture- NPTEL and others.	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-03	End Semester Theory Exam	**Student will be asked to**(and/or): 1. Draw circuit diagram and explain working of forward/reverse biasing of PN Junction. 2. Draw characteristic of Zener diode. 3. List out the application of tunnel diode, zener diode.	10	Question paper, Rating scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

		OUTCOME	E	0	3	2	0	1	2	4	

COURSE NAME	**Basic Electronics**
CO Description	Classify different semiconductor diodes.
LO Description	Illustrate various type of diode viz.Schottky, Varactor, Photo Diode and LED

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-04	Constructional features, characteristics, symbol and applications of – Schottky Diode, Varactor Diode, Photo Diode, LED.	Interactive classroom lecture, PPT, Video, demonstration, quiz, assignments.	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	07	--	Text Books, PPT, Handouts, chalk board, charts, Video lecture- NPTEL and others.	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-04	Mid Semester Theory Exam	**Student will be asked to**(and/or): 1. Explain working of Schottky/Varactor /Photo diode with circuit diagram. 2. Draw the characteristic of given diode circuit.	10	Question paper + Rating scale.	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

		OUTCOME	E	0	3	2	0	1	2	5	

COURSE NAME	Basic Electronics
CO Description	Classify different semiconductor diodes.
LO Description	Verify the V-I characteristics of diode.

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-05	Plot the V-I characteristics of a Silicon Diode, Germanium Diode and Zener Diode using Trainer-Kit/breadboard and/or Simulation Software and Verify it	Lab demonstration, PPT , hands on practice, lab assignments.	• Teacher with support from lab staff will demonstrate the procedure of lab experiments. • Student will conduct lab assignment based on these experiments.	08	8	Lab manual, charts, Handouts, experimental trainer instruments/kit with measuring instruments, computer with relevant simulation software and high speed internet.	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-05	Practical test in laboratory	**Student will be asked to** 1. Simulate and verify the V-I characteristic of given diode.	10	Rubrics, Rating scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (Diploma Wing) Bhopal	**SCHEME FOR LEARNING**	Branch Code	Course Code	CO Code	LO Code	Format No. **4**

	OUTCOME	E	0	3	2	0	1	3	6	

COURSE NAME	Basic Electronics
CO Description	Categorize diode rectifiers, filters and multipliers.
LO Description	Constructdifferent diode based circuit with different parameters.

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-06	Need of rectification, Types of rectifier-Half Wave, Full Wave and Bridge rectifier, Comparison, Average, Peak and RMS Values, Ripple factor, PIV of diode used in rectifier circuits, Rectifier efficiency.	Interactive classroom lecture, PPT, Video, demonstration, quiz, assignments.	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	07	--	Text Books, PPT, Handouts, chalk board, charts, Video lecture-NPTEL and others.	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-06	End Semester Theory Exam	**Student will be asked to**(and/or): 1. Classify the rectifier and list out the need of it. 2. Draw circuit diagram and explain working of given rectifier. 3. Derivevarious parameters of given rectifier circuit. 4. Simple numerical to calculate parameters of given rectifier circuit	10	Question paper , Rating scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING	Branch Code	Course Code	CO Code	LO Code	Format No. 4

| | | | | OUTCOME | E | 0 | 3 | 2 | 0 | 1 | 3 | 7 | |

COURSE NAME	**Basic Electronics**
CO Description	Categorize diode rectifiers, filters and multipliers.
LO Description	Explain operation of filters and multiplier circuits.

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-07	Need of Filter Circuits, Types of filter circuits-capacitor, L- type and pie type, comparison of filters, Basics of Voltage multiplier - Doubler and Tripler, Clipper- Series and Shunt, Clamper- Positive and Negative.	Interactive classroom lecture, PPT, Video, demonstration, quiz, assignments.	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	08	--	Text Books, PPT, Handouts, chalk board, charts, Video lecture- NPTEL and others.	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-07	End Semester Theory Exam	**Student will be asked to** (and/or): 1. List down different types of filters and write down need of filter. 2. Explain the given filter circuit with the help of circuit diagram. 3. Explain the given multiplier circuit. 4. Simple numerical on clipper & clamper circuit.	10	Question paper , Rating scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (Diploma Wing) Bhopal	**SCHEME FOR LEARNING**	Branch Code	Course Code	CO Code	LO Code	Format No. **4**

| | **OUTCOME** | | E | 0 | 3 | 2 | 0 | 1 | 3 | 8 | |

COURSE NAME	Basic Electronics
CO Description	Categorize diode rectifiers, filters and multipliers.
LO Description	Assemble the circuit and verify the waveform of rectifiers.

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-08	Assemble / setup the circuit of Half Wave rectifier, Full Wave rectifiers and Bridge rectifier on Trainer-Kit/breadboard and/or Simulation Software and verify the output waveform.	Lab demonstration, PPT , hands on practice, lab assignments.	• Teacher with support from lab staff will demonstrate the procedure of lab experiments. • Student will conduct lab assignment based on these experiments.	08	8	Lab manual, charts, Handouts, experimental trainer instruments /kit with measuring instruments, computer with relevant simulation software and high speed internet.	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-09	Practical test in laboratory	**Student will be asked to** 1. Setup the circuit of given rectifier and verify output waveform.	15	Rubrics, Rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code		CO Code	LO Code	Format No. **4**
		E	0	3	2	0	1	4	
								9	

COURSE NAME	Basic Electronics
CO Description	Compare different bipolar junctiontransistors
LO Description	Classify different voltage regulator ICs.

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-9	Basic Structure, Types of Bipolar Junction Transistor (BJT): PNP & NPN transistors, Transistor action, Check and identify the transistor leads. Transistor Configurations - CE, CC and CB mode. Comparison between three configurations.	Interactive classroom lecture, PPT, Video, demonstration, quiz, assignments.	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	07	--	Text Books, PPT, Handouts, chalk board, charts, Video lecture- NPTEL and others.	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-9	End Semester Theory Exam	**Student will be asked to** (and/or): 1. Explain the given type of Bipolar Junction Transistor. 2. Draw circuit diagram for given configuration of PNP and NPN transistor. 3. Compare different configuration of transistor.	10	Question paper, Rating scale.	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

<table>
<tr><td rowspan="2">RGPV (Diploma Wing) Bhopal</td><td rowspan="2">SCHEME FOR LEARNING OUTCOME</td><td colspan="2">Branch Code</td><td colspan="2">Course Code</td><td>CO Code</td><td>LO Code</td><td rowspan="2">Format No. 4</td></tr>
<tr><td>E</td><td>0</td><td>3</td><td>2</td><td>0 1</td><td>4</td><td>10</td></tr>
</table>

COURSE NAME	Basic Electronics
CO Description	Compare different bipolar junctiontransistors
LO Description	Describe operation of various converter ICs.

<div align="center">SCHEME OF STUDY</div>

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-10	V -I characteristics of Bipolar Junction Transistor (BJT) - Input and Output Characteristics, Regions of Transistor operation - active, saturation & cutoff, DC current gains- Alpha (α) and Beta (β), relation between alpha & beta, Transistor as a Switch.	Interactive classroom lecture, PPT, Video, demonstration, quiz, assignments.	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	07	--	Text Books, PPT, Handouts, chalk board, charts, Video lecture- NPTEL and others.	

<div align="center">SCHEME OF ASSESSMENT</div>

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-10	End Semester Theory Exam	**Student will be asked to**(and/or): 1. Draw the input output characteristic for given configuration of transistor. 2. Explain working of transistor as a switch. 3. Simple numerical on calculation of Alpha (α) and Beta (β).	10	Question paper , Rating scale.	External

<div align="center">ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</div>

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code		CO Code	LO Code	Format No. 4
		E	0	3	2	0	1	4	11

COURSE NAME	Basic Electronics
CO Description	Compare different bipolar junctiontransistors
LO Description	Plot the input and output characteristics of BJT for different configuration.

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-11	Setup the BJT for CE, CB and CC configuration circuit and obtain input and output characteristics using Trainer-Kit/breadboard and/or Simulation Software and Verify it.	Lab demonstration, PPT , hands on practice, lab assignments.	• Teacher with support from lab staff will demonstrate the procedure of lab experiments. • Student will conduct lab assignment based on these experiments.	08	8	Lab manual, charts, Handouts, experimental trainer instruments/kit with measuring instruments, computer with relevant simulation software and high speed internet.	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-11	Practical test in laboratory	**Student will be asked to** 1. Set up circuit and plot the input output characteristic for given configuration of transistor.	10	Rubrics, Rating scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code		CO Code	LO Code	Format No. **4**
		E	*0*	*3*	*2*	*0*	*1*	*5* *12*	

COURSE NAME	Basic Electronics
CO Description	Classify different type of field effect transistors (FET)
LO Description	Explain the working principle of FETs.

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-12	Types of FET, Comparison of FET with BJT, FET: Operation, V -I characteristic, Pinch-off voltage, MOSFET- Depletion and Enhancement type	Interactive classroom lecture, PPT, Video, demonstration, quiz, assignments.	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	07	--	Text Books, PPT, Handouts, chalk board, charts, Video lecture- NPTEL and others.	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-12	End Semester Theory Exam	**Student will be asked to**(and/or): 1. Compare FET with BJT. 2. Draw V-I characteristic and explain operation of FET. 3. Explain the MOSFET of given type with the help of diagram.	10	Question paper , Rating scale.	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code		Course Code		CO Code	LO Code	Format No. **4**
		E 0 3	2 0 1			5	13	

COURSE NAME	Basic Electronics
CO Description	Classify different type of field effect transistors (FET)
LO Description	Define CMOS, MESFET and UJT.

<div align="center">SCHEME OF STUDY</div>

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-13	Introduction to CMOS and MESFET. UJT (Unijunction Transistor) - Structural diagram of UJT, working of UJT, UJT as relaxation oscillator	Interactive classroom lecture, PPT, Video, demonstration, quiz, assignments.	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	07	--	Text Books, PPT, Handouts, chalk board, charts, Video lecture- NPTEL and others.	

<div align="center">SCHEME OF ASSESSMENT</div>

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-13	Mid Semester Theory Exam	**Student will be asked to** (and/or): 1. Explain CMOS with help of diagram. 2. Draw structural diagram of UJT and explain working of it. 3. Explain the working of UJT as relaxation oscillator..	10	Question paper , Rating scale.	Internal

<div align="center">ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</div>

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code			Course Code			CO Code	LO Code	Format No. 4
		E	0	3	2	0	1	5	14	

COURSE NAME	Basic Electronics
CO Description	Classify different type of field effect transistors (FET)
LO Description	Verify the characteristic of FETs and UJT.

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-14	Assemble the circuit and plot V-I characteristic of FET, MOSFET and UJT On Trainer-Kit/breadboard and/or Simulation Software and Verify it.	Lab demonstration, PPT , hands on practice, labassignments.	• Teacher with support from lab staff will demonstrate the procedure of lab experiments. • Student will conduct lab assignment based on these experiments.	--	8	Lab manual, charts, Handouts, experimental trainer instruments/kit with measuring instruments, computer with relevant simulation software and high speed internet.	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal

LO-14	Practical test in laboratory	**Student will be asked to** 1. Assemble circuit ofFET, MOSFET and UJT and verify characteristic of it.	15	Rubrics, Rating scale	Internal
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)					

Rajiv Gandhi Proudyogiki Vishwavidyalaya
Office Complex, A-4 Gautam Nagar, Bhopal (M. P.)
INTERNAL ASSESSMENT (PRACTICAL COMPONENT) MARKS

Examination Centre									
Branch	EE,EEE,ETC,OPTO,EINST								
Term / Semester	II semester		Name of Examination						
Course Code	201/		Course Name		BASIC ELECTRONICS **(PRACTICAL COMPONENT)**				

			Marks Obtained					
		CO No.	3	5				
		LO No.	8	14				
		Max. Marks	15	15				
S. No.	**Enrollment No.**	**Student Name**						
1								
2								

NOTE: Max. Marks for Internal Assessment Practical Component is 30. Marks obtained by the students will be proportionately reduced to 20 , while processing the result.

Rajiv Gandhi Proudyogiki Vishwavidyalaya
Office Complex, A-4 Gautam Nagar, Bhopal (M. P.)
INTERNAL ASSESSMENT (THEORY COMPONENT) MARKS

Examination Centre									
Branch	CSE,IT,CHM								
Term / Semester	II semester		Name of Examination						
Course Code			Course Name		BASIC ELECTRONICS **(THEORY COMPONENT)**				

			Marks Obtained					
		CO No.	1	2	5			
		LO No.	1	4	13			
		Max. Marks	10	10	10			
S. No.	**Enrollment No.**	**Student Name**						
1								
2								

NOTE: Max. Marks for Internal Assessment Theory Component is 30.

NOTE: End Sem Practical Examination should be conducted for a Max Marks of 30