SVRK GOVERNMENT DEGREE COLLEGE :: NIDADAVOLE

TABLE – A – CURRICULAR PLAN – LECTURERE WISE

NAME OF THE LECTURER: *E. NAGESWARA RAO* **DEPARTMENT:** *PHYSICS* **CLASS:** *III B.Sc.(MPCs)* **YEAR:** *2022-2023*

SEMESTER: V **PAPER:** *6(C) APPLICATIONS OF ELECTRICITY & ELECTRONICS*

S. No.	Month & Week	Hours available	Syllabus topic	Additional input / value addition	Curricular Activity				Co-curricular Activity				Remarks
					Activity conducted	Hours allotted	Whether conducted	If nor, alternate	Activity conducted	Hours allotted	Whether conducted	If not,	
1	2	3	4	5	6	7	8	9	10	11	13	13	13
1	November 3rd Week	3 2	**Unit-I** **INTRODUCTION TO PASSIVE ELEMENTS**	Potentiometers - DC potentiometers and AC potentiometers.	Questioning and interactive lecture and Practical demonstration	3 2			-				
2	November 4th Week	4 2	Passive and Active elements-Examples, **Resistor**-Types of Resistors, Color coding - Applications of a Resistor as a heating element in heaters and as a fuse element. **Capacitor**-Types of Capacitors, Color coding, Energy stored in a capacitor.		Guided instruction experimental learning and practical demonstration.	3 2			field techniques/skills of understanding the operation				
3	December 1st Week	3 2	Applications of Capacitor in power supplies, motors(Fans) etc.**,** **Inductor**-Types of Inductors, EMF induced in an Inductor, Applications of Inductor		Inquiry based lecture demonstration and practical demonstration.	2 2			Assi.t/quiz/student seminar	1			
4	December 2nd Week	3 2	Application of choke in a fan and in a radio tuning circuit, Series resonance circuit as a Radio tuning		Direct instructional demonstration and	2 2			Assi.t/quiz/student seminar	1			

			circuit.		practical demonstration.								
5	December 3rd Week	3 2	**Unit-II Power Sources (Batteries)** Types of power sources-DC & AC sources, Different types of batteries,	Power system measurement, High voltage measurement and testing.	Interactive lecture experimental learning and practical demonstration.	2 2			Assi.t/quiz/student seminar	1			
6	December 4th Week	4 2	Rechargeable batteries –Lead acid batteries, Ni-MH batteries, Li-ion batteries- Li-PO batteries, Series, Parallel & Series-Parallel configuration of batteries,		Questioning and interactive lecture and Practical demonstration	2 2			field techniques/skills of understanding the operation	1			
7	January 1st Week	3 2	Constant Voltage source-Constant Current Source-Applications of Current sources & Voltage sources, SMPS used in computers.		Guided instruction experimental learning and practical demonstration.	2 2			Assi.t/quiz/student seminar	1			
8	January 2nd Week	3 2	**Unit-III Alternating Currents** A.C Power source-Generator, Construction and its working principle, Transformers-Construction and its working principle,	Instruments transformers – current transformers, potential transformers, and differences.	Inquiry based lecture demonstration and practical demonstration.	2 2			Assi.t/quiz/student seminar	1			
9	January 4th Week	4 2	Types of Transformers-Step-down and Step-up Transformers, Relation between primary turns and secondary turns of the transformer with emf.,		Direct instructional demonstration and practical demonstration.	2 2			field techniques/skills of understanding the operation	1			
10	February 1st week	3 2	Use of a Transformer in a regulated Power supplies, Single phase motor –working principle, Applications of motors(like water pump, fan etc.).		Interactive lecture experimental learning and practical demonstration.	1 2			Assi.t/quiz/student seminar	1			
11	February 2nd week	3 2	**Unit-IV Power Supplies** Working of a DC regulated power supply, Construction of a 5 volts regulated power supply,	Measurement of phase and frequency-power factor meters, frequency	Questioning and interactive lecture and Practical demonstration	2 2			Assi.t/quiz/student seminar	1			

12	February 3rd week	3 2	Design of a step-down (ex: 220-12V) and step-up (ex: 120-240V) transformers- Simple Design of FM Radio circuit using LCR series resonance (tuning) circuit,	meters and synchronoscopes.	Guided instruction experimental learning and practical demonstration.	2 2			Assi.t/quiz/student seminar	1			
13	February 4th week	4 2	Checking the output voltage of a battery eliminator using a MultiMate.(Trouble shooting), Design of a simple 5 volts DC charger, Power supply for computers(SMPS)		Inquiry based lecture demonstration and practical demonstration.	2 2			field techniques/skills of understanding the operation	1			
14	March 1st week	3 2	**Unit-V Applications of Electromagnetic Induction** DC motor –Construction and operating principle, Calculation of power, voltage and current in a DC motor,	AC Bridges – measurement of self-induction, mutual induction and measurement of frquency.	Direct instructional demonstration and practical demonstration.	2 2			Assi.t/quiz/student seminar	1			
15	March 2nd week	3 2	Design of a simple Motor (for example Fan) with suitable turns of coil-DC generator-Construction, operating principle and EMF equation,		Interactive lecture experimental learning and practical demonstration.				Assi.t/quiz/student seminar	1			
16	March 3rd week	3 2	Construction of a simple DC generator, Difference between DC and AC generators		Practicing demonstration				Assi.t/quiz/student seminar	1			
17	March 4th week	4 2	REVISION		Practicing demonstration				Assi.t/quiz/student seminar	1			

Signature of the Lecturer Signature of the Lecturer in charge Signature of the Principal

SVRK GOVERNMENT DEGREE COLLEGE:: NIDADAVOLE

TABLE – B – CURRICULAR PLAN – LECTURERE WISE

NAME OF THE LECTURER: E. NAGESWARA RAO **DEPARTMENT: PHYSICS** **CLASS: III B.Sc.(MPCs)** **YEAR: 2022-2023**

SEMESTER: V **PAPER: 6(C) APPLICATIONS OF ELECTRICITY & ELECTRONICS**

S. No.	Month & Week	Hours available	Syllabus topic	Additional input / value addition	Curricular Activity		Co-curricular Activity		Remarks
					Activity conducted	Hours allotted	Activity conducted	Hours allotted	
1	2	3	4	5	6	7	10	11	13
1	November 3rd Week	3 2	**Unit-I** **INTRODUCTION TO PASSIVE ELEMENTS**	Potentiometers - DC potentiometers and AC potentiometers.	Questioning and interactive lecture and Practical demonstration	3 2	-		
2	November 4th Week	4 2	Passive and Active elements-Examples, **Resistor**-Types of Resistors, Color coding - Applications of a Resistor as a heating element in heaters and as a fuse element. **Capacitor**-Types of Capacitors, Color coding, Energy stored in a capacitor.		Guided instruction experimental learning and practical demonstration.	3 2	field techniques/skills of understanding the operation		
3	December 1st Week	3 2	Applications of Capacitor in power supplies, motors(Fans) etc., **Inductor**-Types of Inductors, EMF induced in an Inductor, Applications of Inductor		Inquiry based lecture demonstration and practical demonstration.	2 2	Assi.t/quiz/student seminar	1	
4	December 2nd Week	3 2	Application of choke in a fan and in a radio tuning circuit, Series		Direct instructional	2 2	Assi.t/quiz/student seminar	1	

			resonance circuit as a Radio tuning circuit.		demonstration and practical demonstration.				
5	December 3rd Week	3 2	**Unit-II Power Sources (Batteries)** Types of power sources-DC & AC sources, Different types of batteries,	Power system measurement, High voltage measurement and testing.	Interactive lecture experimental learning and practical demonstration.	2 2	Assi.t/quiz/student seminar	1	
6	December 4th Week	4 2	Rechargeable batteries –Lead acid batteries, Ni-MH batteries, Li-ion batteries- Li-PO batteries, Series, Parallel & Series-Parallel configuration of batteries,		Questioning and interactive lecture and Practical demonstration	2 2	field techniques/skills of understanding the operation	1	
7	January 1st Week	3 2	Constant Voltage source-Constant Current Source-Applications of Current sources & Voltage sources, SMPS used in computers.		Guided instruction experimental learning and practical demonstration.	2 2	Assi.t/quiz/student seminar	1	
8	January 2nd Week	3 2	**Unit-III Alternating Currents** A.C Power source-Generator, Construction and its working principle, Transformers-Construction and its working principle,	Instruments transformers – current transformers, potential transformers, and differences.	Inquiry based lecture demonstration and practical demonstration.	2 2	Assi.t/quiz/student seminar	1	
9	January 4th Week	4 2	Types of Transformers-Step-down and Step-up Transformers, Relation between primary turns and secondary turns of the transformer with emf.,		Direct instructional demonstration and practical demonstration.	2 2	field techniques/skills of understanding the operation	1	
10	February 1st week	3 2	Use of a Transformer in a regulated Power supplies, Single phase motor –working principle, Applications of motors(like water pump, fan etc.).		Interactive lecture experimental learning and practical demonstration.	1 2	Assi.t/quiz/student seminar	1	
11	February 2nd week	3 2	**Unit-IV Power Supplies** Working of a DC regulated power supply, Construction of a 5 volts regulated power supply,	Measurement of phase and frequency-power factor meters,	Questioning and interactive lecture and Practical	2 2	Assi.t/quiz/student seminar	1	

				frequency meters and synchronoscopes.	demonstration				
12	February 3rd week	3 2	Design of a step-down (ex: 220-12V) and step-up (ex: 120-240V) transformers- Simple Design of FM Radio circuit using LCR series resonance (tuning) circuit,		Guided instruction experimental learning and practical demonstration.	2 2	Assi.t/quiz/student seminar	1	
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14	March 1st week	3 2	**Unit-V Applications of Electromagnetic Induction** DC motor –Construction and operating principle, Calculation of power, voltage and current in a DC motor,	AC Bridges – measurement of self-induction, mutual induction and measurement of frquency.	Direct instructional demonstration and practical demonstration.	2 2	Assi.t/quiz/student seminar	1	
15	March 2nd week	3 2	Design of a simple Motor (for example Fan) with suitable turns of coil-DC generator-Construction, operating principle and EMF equation,		Interactive lecture experimental learning and practical demonstration.		Assi.t/quiz/student seminar	1	
16	March 3rd week	3 2	Construction of a simple DC generator, Difference between DC and AC generators		Practicing demonstration		Assi.t/quiz/student seminar	1	
17	March 4th week	4 2	REVISION		Practicing demonstration		Assi.t/quiz/student seminar	1	

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