AJAY SENSORS AND INSTRUMENTS, BANGALORE

EXPERIMENTAL PHYSICS KIT - APPARATUS REQUIRED

S/N	Description	Name of Experiment	Apparaturs - Scope of supply	Others	Weblink- youtube		Time
1	**Introduction and Acknowledgement**				https://www.youtube.com/watch?v=XLrW_XqJJ24&list=UU5Aq2JESu0QLmP9W		28.31
2.1	**Mechanics Experiments**	Youngs Modulus of Steel by Flexural Vibration of a bar	Youngs Modulus Unit Signal Generator Power Amplifier	DMM	https://www.youtube.com/watch?v=yUEOeuvXR-E&index=41&list=UU5Aq2JESu0QLmP9		39.06
2.2		Rigidity Modulus of a Brass wire	Rigidity Modulus unit Signal Generator Power Amplifier		https://www.youtube.com/watch?v=UpR3qBplSNE&index=42&list=UU5Aq2JESu0QLmP9WveZSvbQ		13.01
3.1	**Heat Experiments**	Calibration of Si Diode	Insert containing Diode Regulated Power Supply Temperature Controller Furnace Constant Current Source DC Differential Amplifier	DMM	https://www.youtube.com/watch?v=JqExe-TjMgE		17.44
3.2		Stefan's Constant of Radiation	Stefan's Constant Unit Constant Current Source DC Differential Amplifier	DMM	https://www.youtube.com/watch?v=k4r46VED6Sc		14.44
3.3		Meas. Of Electrical and Thermal Conductivity of Copper	Thermal Conductivity of Copper Constant Current Source DC Differential Amplifier	DMM	https://www.youtube.com/watch?v=xXe7jqoqmnA&index=52&list=UU5Aq2JESu0QLmP9WveZSvbQ		28.05
3.4		Thermal Conductivity of Poor Conductor	Th. Conductivity of Poor Conductor Constant Current Source DC Differential Amplifier	DMM			
3.5		Thermal Diffusivity of Brass	Thermal Diffusivity Unit Regulated Power supply DC Differential Amplifier	DMM	https://www.youtube.com/watch?v=NdacQZ_tX1Y&index=51&list=UU5Aq2JESu0QLmP9WveZSvbQ		26.22
	Electricity Experiments						
4.1	**DC Experiments**	High Resistance by leakage	Measurement of High resistance unit	DMM	https://www.youtube.com/watch?v=OlB7OQkrQq4&list=UU5Aq2JESu0QLmP9WveZSvbQ&index=50		13.05
4.2		Temperature co-efficient of resistance of copper	Insert for measuring TCR of copper Regulated Power supply Temperature Controller Furnace Constant current source		https://www.youtube.com/watch?v=BTksFYBJKOY&list=UU5Aq2JESu0QLmP9WveZSvbQ&index=37		28.38
4.3		Energy Bandgap of a semiconductor	Insert contaning Diode Regulated Power supply Temperature Controller Furnace		https://www.youtube.com/watch?v=BTksFYBJKOY&list=UU5Aq2JESu0QLmP9WveZSvbQ&index=37		28.38

5.1	**AC Experiments**	Measurement of Self Inductance of a coil	RLC Unit Signal Generator	DMM	https://www.youtube.com/watch?v=pTM2D1UVCRI&list=UU5Aq2JESu0QLmP9		10.26
5.2		Measurement of capacitance	RLC Unit Signal Generator	DMM	https://www.youtube.com/watch?v=pTM2D1UVCRI&list=UU5Aq2JESu0QLmP9		10.26
5.3		Series and Parallel resonant circuit	RLC Unit Signal Generator	DMM	https://www.youtube.com/watch?v=pGWkAZXWNSw&index=48&list=UU5Aq2J		9.41
5.4		Passive Filters	Passive filter unit Signal Generator	DMM	https://www.youtube.com/watch?v=krvlNvv9O2s&index=46&list=UU5Aq2JESu		16.12
6.1	**AC Bridge Experiments**	AC Wheatstone Bridge	AC Bridge unit Signal Generator	DMM	https://www.youtube.com/watch?v=BO8P9H0Upek&index=45&list=UU5Aq2J		24.4
6.2		Maxwell's Bridge	AC Bridge unit Signal Generator	DMM	https://www.youtube.com/watch?v=BO8P9H0Upek&index=45&list=UU5Aq2J		
6.3		De Sauty's Bridge	AC Bridge unit Signal Generator	DMM	https://www.youtube.com/watch?v=BO8P9H0Upek&index=45&list=UU5Aq2J		
6.4		Anderson's Bridge	AC Bridge unit Signal Generator	DMM	https://www.youtube.com/watch?v=BO8P9H0Upek&index=45&list=UU5Aq2J		
7.1	**Capacitance Experiments**	Dielectric constant of a non polar liquid	Capacitance measuring unit Capacitance jar	DMM	https://www.youtube.com/watch?v=wpZ_DQOYDIM&index=43&list=UU5Aq2J		
7.2		Dielectric constant of a non polar liquid	Capacitance measuring unit Capacitance jar	DMM	https://www.youtube.com/watch?v=wpZ_DQOYDIM&index=43&list=UU5Aq2J		
7.3		Verification of Curie-Weiss law	Insert with ceramic capacitor Regulated Power supply Temperature Controller Furnace Signal Generator	DMM	https://www.youtube.com/watch?v=wpZ_DQOYDIM&index=43&list=UU5Aq2JESu0QLmP9WveZSvbQ		20.08
8.1	**Magnetism Experiments**	BH Curve in a ferromagnetic material	BH Curve setup unit Integrator Regulated Power Supply	DMM	https://www.youtube.com/watch?v=QTyjBiglRkI&index=32&list=UU5Aq2JESu0QLmP9WveZSvbQ		51.06
8.2		Magnetic field variation along with axis of the solenoid	Search coil set-up unit Integrator Regulated Power Supply	DMM			
9	**Relaxation Experiment**	Time constant of a serial light bulb	Thermal relaxation setup unit Signal Generator	DMM	https://www.youtube.com/watch?v=mCHSzRmOc7g&index=31&list=UU5Aq2J		26.18
10.1	**Lock-in Amplifier Experiments**	Principle of Phase sensitive Detection	Lock-in Amplifier Unit	DMM CRO	https://www.youtube.com/watch?v=a6qTEXgGndM&index=39&list=UU5Aq2JE		17.49
10.2		Calibration of Lock-in Amplifier	Lock-in Amplifier Unit Signal Generator	DMM CRO	https://www.youtube.com/watch?v=v4blEnOVTNs&index=38&list=UU5Aq2JES		14.41
10.3		Mutual Inductance with Lock-in amplifier	Lock-in Amplifier Unit Mutual Inductance coil Signal Generator	DMM CRO	https://www.youtube.com/watch?v=eLKphg9Ad-A&index=34&list=UU5Aq2JESu0QLmP9		53.42
10.4		Measurement of Low resistance	Lock-in Amplifier Unit Low Resistance box Signal Generator	DMM CRO			

11	**Non-Linear Dynamics**	Chua's circuit for non-linear dynamics	Chua's circuit unit	CRO	https://www.youtube.com/watch?v=RZ-qQFQUfOw&index=33&list=UU5Aq2JESu0QLmP9WveZSvbQ		51.06
12		Feigenbaum circuit	Feigenbaum circuit	CRO	https://www.youtube.com/watch?v=m0NyPMshWFE&index=35&list=UU5Aq2JESu0QLmP9WveZSvbQ		33.42
13		Neutral Temperature of Fe-Cu Thermocouple (Seebeck coefficient)	Power supply - AC Furnace DC Differential Amplifier Sample holder (Fe-Cu)		https://www.youtube.com/watch?v=vwOxLvwO42o&index=36&list=UU5Aq2JESu0QLmP9WveZSvbQ		32.13
14		Phase transition in Shape memory alloy Nitinol	Flat Bed Heaters DC Power Supply DC Differential Amplifier		https://www.youtube.com/watch?v=K_Limq13y0Q&index=40&list=UU5Aq2JESu0QLmP9WveZSvbQ		16.34
15		Determination of k/e using transistor	k/e unit	DMM DMM	https://www.youtube.com/watch?v=Z_3LFQNOkG8&index=53&list=UU5Aq2JE		7.35
16		Overview of instruments			https://www.youtube.com/watch?v=t60G91NDtdA&index=55&list=UU5Aq2JESu0QLmP9WveZSvbQ		12.04