

Branch

CHEMICAL

Semester

4

Course Code

Course Name

FLUID FLOW OPERATIONS
AND MACHINERY

Course Outcome 1	Student will be able to understand Fluid Static, Hydrostatic Equilibrium	Teach Hrs	Marks
Learning Outcome 1	Student will be able to explain theory of hydrostatic equilibrium and able to apply in manometers calculation and decanters design	8	10
Contents	Nature of fluid, Pressure Concept, Hydrostatic Equilibrium, Hydrostatic equilibrium in centrifugal field, Barometric equation, mano meter (U tube, inclined, differential) decanter (Gravity and Centrifugal)		
Method of Assessment	Theory Exam		
Course Outcome 2	Student will be able to understand fundamentals & Fluid Flow		
Learning Outcome 1	Student will be able to explain terms related to fluid flow	8	5
Contents	Potential flow, velocity field, the 1 dimensional flow, velocity gradient, rate of shear, shear stress field, viscosity, kinematic viscosity, Newtonian and non-newtonian fluid.		
Method of Assessment	Paper Pen Test		
Learning Outcome 2	Student will be able to explain behaviour of flowing fluids.	8	5
Contents	Boundary layer, Boundary layer formation, separation and wake formation, Boundary layer in straight tube, Reynolds number, Laminar flow, Transition Flow, Turbulent Flow, Transition from laminar to turbulent flow.		
Method of Assessment	Theory Exam		
Course Outcome 3	Student will be able to understand the basic equations of fluid flow.		
Learning Outcome 1	Student will be able to explain theory and calculate parameters of flowing fluids.	8	10

Contents	Stream lines and stream tubes, equation of continuity average and mass velocity, momentum balance, momentum correction factor.		
Method of Assessment	Paper Pen Test		
Learning Outcome 2	Student will be able to explain theory of Bernoulli equation and its application in fluid flow system.	8	10
Contents	The Bernoulli equation without friction, mechanical energy equation, kinetic energy correction factor, correction in Bernoulli equation for fluid friction, pump work in Bernoulli equation.		
Method of Assessment	Theory Exam		
Learning Outcome 3	Student will be able to verify kinetic energy, potential energy and pressure energy by Bernoulli equation in given flow system.	10	10
Contents	Perform in laboratory to verify Bernoulli equation		
Method of Assessment	Laboratory Test by observation		
Course Outcome 4	Student will be able to understand flow of incompressible fluid in conduits.		
Learning Outcome 1	Student will be able to understand theory and able to calculate shear stress and skin friction for Newtonian fluid in pipe.	6	5
Contents	Shear stress distribution in tubes, relation between skin friction and wall shear. The friction factor, relation between skin friction parameters		
Method of Assessment	Paper Pen Test		
Learning Outcome 2	Student will be able to understand theory of laminar flow of Newtonian fluid in pipe.	8	10
Contents	Relation between local velocity and maximum velocity, average velocity, kinetic energy and momentum correction factor derivation, Hagen-Poiseuille equation, flow through channels of non circular cross-section, friction factor chart.		
Method of Assessment	Theory Exam		
Learning Outcome 3	Student will be able to calculate head loss in given fluid flow system.	8	10
Contents	Effect of roughness, friction losses from change in velocity, flow direction, sudden expansion, sudden contraction, system fittings and valves.		
Method of Assessment	Theory Exam		
Learning Outcome 4	Student will be able to evaluate head loss in fluid flow system.	9	20

Contents	Head loss in the system due to friction, sudden expansion, and sudden contraction across elbow, bend and valve.		
Method of Assessment	Laboratory Test by observation		
Course Outcome 5	Student will be able to select fittings and machinery for given fluid flow system.		
Learning Outcome 1	Student will be able to explain pipe fitting and valves.	10	10
Contents	Pipe and tube size, selection of size, flow controlling valve, Gate valve, Globe valve, Ball valve, Butter fly valve, Check valves, Diaphragm valve, Joints and Fittings.		
Method of Assessment	Paper Pen Test		
Learning Outcome 2	Student will be able to explain construction and working of pumps.	12	15
Contents	Classification of pumps Construction and working of centrifugal pump. Developed head, Cavitation, suction lift, NPSH, capacity, power and speed, priming, characteristics curves. Construction and working of Reciprocating Pump and Gear Pump. Elementary idea about, compressors, blowers and jet ejector.		
Method of Assessment	Theory Exam		
Learning Outcome 3	Student will be able to explain metering of fluids in pipe and open channels.	12	10
Contents	Principal, construction and working of venturimeter, orificemeter, rotameter and pitot tube. Classification of notches and weir Discharge over rectangular and triangular notch.		
Method of Assessment	Theory Exam		
Learning Outcome 4	Student will be able to calculate discharge through pipe by venturi meter and orifice meter in a given system.	10	10
Contents	Perform in laboratory to verify discharge coefficient.		
Method of Assessment	Laboratory Test by observation		
Learning Outcome 5	Student will be able to calculate discharge by triangular and rectangular notch for given system.	12	10
Contents	Perform in laboratory to verify discharge coefficient.		
Method of Assessment	Laboratory Test by observation		

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

COURSE NAME	FLUID FLOW OPERATIONS AND MACHINERY
CO Description	Student will be able to understand Fluid Static, Hydrostatic Equilibrium
LO Description	Student will be able to explain theory of hydrostatic equilibrium and able to apply in manometers calculation and decanters design

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Nature of fluid, Pressure Concept, Hydrostatic Equilibrium, Hydrostatic equilibrium in centrifugal field, Barometric equation, manometer (U tube, inclined, differential) decanter (Gravity and Centrifugal)	Traditional Lecture Method	Faculty will explain learning content. To identify students weakness assignment will be given and accordingly remedial and tutorials will be taken.	8	2	Suggested text book handouts power point	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Theory Exam	Theory questions related to the learned content will be asked in the university question paper	10	Question paper	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Nil

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

COURSE NAME	FLUID FLOW OPERATIONS AND MACHINERY
CO Description	Student will be able to understand fundamentals & Fluid Flow
LO Description	Student will be able to explain terms related to fluid flow

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Potential flow, velocity field, the 1 dimensional flow, velocity gradient, rate of shear, shear stress field, viscosity, kinematic viscosity, Newtonian and non-newtonian fluid.	Traditional Lecture Method	Faculty will explain learning content. To identify students weakness assignment will be given and accordingly remedial and tutorials will be taken.	8	2	Suggested text book handouts power point	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Paper Pen Test	Theory question (including simple numerical problem) related to the learned content will be asked in the test paper	5	Test Paper + Rating Scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Nil

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

COURSE NAME	FLUID FLOW OPERATIONS AND MACHINERY
CO Description	Student will be able to understand fundamentals & Fluid Flow
LO Description	Student will be able to explain behaviour of flowing fluids.

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Boundary layer, Boundary layer formation, separation and wake formation, Boundary layer in straight tube, Reynolds number, Laminar flow, Transition Flow, Turbulent Flow, Transition from laminar to turbulent flow.	Traditional Lecture Method	Faculty will explain learning content. To identify students weakness assignment will be given and accordingly remedial and tutorials will be taken.	8	2	Related Videos Reynolds experiment setup Faculty will demonstrate laminar, transition and turbulent flow in lab.	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
	Theory Exam	Theory questions related to the learned content will be asked in the university question paper	5	Question paper	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Nil

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code	Course Code	CO Code	LO Code	Format No. 4
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RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	C	0	2				3	1	Format No. 4
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COURSE NAME	FLUID FLOW OPERATIONS AND MACHINERY
CO Description	Student will be able to understand the basic equations of fluid flow.

LO Description	Student will be able to explain theory and calculate parameters of flowing fluids.
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SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Stream lines and stream tubes, equation of continuity average and mass velocity, momentum balance, momentum correction factor.	Traditional Lecture Method	Faculty will explain learning content. To identify students weakness assignment will be given and accordingly remedial and tutorials will be taken.	8	2	Suggested text book handouts powerpoint	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
	Paper Pen Test	Theory question (including simple numerical problem) related to the learned content will be asked in the test paper	10	Test Paper + Rating Scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Nil

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code			Course Code			CO Code	LO Code	Format No. 4
				<i>C</i>	<i>0</i>	<i>2</i>				<i>3</i>	<i>2</i>	
COURSE NAME		FLUID FLOW OPERATIONS AND MACHINERY										
CO Description		Student will be able to understand the basic equations of fluid flow.										
LO Description		Student will be able to explain theory of Bernoulli equation and its application in fluid flow system.										
SCHEME OF STUDY												
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks					
1	The Bernoulli equation without friction, mechanical energy equation, kinetic energy correction factor, correction in Bernoulli equation for fluid friction, pump work in Bernoulli equation.	Traditional Lecture Method	Faculty will explain learning content. To identify students weakness assignment will be given and accordingly remedial and tutorials will be taken.	8	2	Suggested text book handouts powerpoint						
SCHEME OF ASSESSMENT												
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal					
	Theory Exam	Theory questions related to the learned content will be asked in the university question paper	10	Question paper			External					
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												
Nil												

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					C	0	2				3	3	
COURSE NAME		FLUID FLOW OPERATIONS AND MACHINERY											
CO Description		Student will be able to understand the basic equations of fluid flow.											
LO Description		Student will be able to verify kinetic energy, potential energy and pressure energy by in Bernoulli equation in given flow system.											
SCHEME OF STUDY													
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Perform in laboratory to verify Bernoulli equation	Lab - demonstration	Faculty will explain the content in lab and demonstrate how to take reading. How these observation are use to calculate kinetic, potential and pressure energy and verify the equation. Students will practice under the guidance of faculty.		10	Experiment Setup Lab Manual							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal						
	Laboratory Test by observation	Examiner will ask to students to take reading and then calculate in front of him and will asses correctness of result	10	Rating Scale			External						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Nil													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					C	0	2				4	1	
COURSE NAME	FLUID FLOW OPERATIONS AND MACHINERY												
CO Description	Student will be able to understand flow of incompressible fluid in conduits.												
LO Description	Student will be able to understand theory and able to calculate shear stress and skin friction for Newtonian fluid in pipe.												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Shear stress distribution in tubes, relation between skin friction and wall shear. The friction factor, relation between skin friction parameters	Traditional Lecture Method	Faculty will explain learning content. To identify students weakness assignment will be given and accordingly remedial and tutorials will be taken.	6	2	Suggested text book handouts power point							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal						
	Paper Pen Test	Theory question (including simple numerical problem) related to the learned content will be asked in the test paper	5	Test Paper + Rating Scale			Internal						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Nil													

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

COURSE NAME	FLUID FLOW OPERATIONS AND MACHINERY
CO Description	Student will be able to understand flow of incompressible fluid in conduits.
LO Description	Student will be able to understand theory of laminar flow of Newtonian fluid in pipe.

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Relation between local velocity and maximum velocity, average velocity, kinetic energy and momentum correction factor derivation, Hagen-Poiseuille equation, flow through channels of non circular cross-section, friction factor chart.	Traditional Lecture Method	Faculty will explain learning content. To identify students weakness assignment will be given and accordingly remedial and tutorials will be taken.	8	2	Suggested text book handouts power point	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
	Theory Exam	Theory questions related to the learned content will be asked in the university question paper	10	Question paper	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Nil

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

COURSE NAME	FLUID FLOW OPERATIONS AND MACHINERY
CO Description	Student will be able to understand flow of incompressible fluid in conduits.
LO Description	Student will be able to calculate head loss in given fluid flow system.

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Effect of roughness, friction losses from change in velocity, flow direction, sudden expansion, sudden contraction, system fittings and valves.	Traditional Lecture Method	Faculty will explain learning content. To identify students weakness assignment will be given and accordingly remedial and tutorials will be taken.	8	2	Suggested text book handouts power point	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
	Theory Exam	Theory questions related to the learned content will be asked in the university question paper	10	Question paper	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Nil

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					C	0	2				4	4	
COURSE NAME		FLUID FLOW OPERATIONS AND MACHINERY											
CO Description		Student will be able to understand flow of incompressible fluid in conduits.											
LO Description		Student will be able to evaluate head loss in fluid flow system.											
SCHEME OF STUDY													
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Head loss in the system due to friction, sudden expansion, and sudden contraction across elbow, bend and valve.	Lab - demonstration	Faculty will explain the content in lab and demonstrate how to take reading. How these observation are use to calculate kinetic, potential and pressure energy and verify the equation. Students will practice under the guidance of faculty.		9	Experiment Setup Lab Manual							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal						
	Laboratory Test by observation	Examiner will ask to students to take reading and then calculate in front of him and will asses correctness of result	20	Rating Scale			Internal						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Nil													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					C	0	2				5	1	
COURSE NAME		FLUID FLOW OPERATIONS AND MACHINERY											
CO Description		Student will be able to select fittings and machinery for given fluid flow system.											
LO Description		Student will be able to explain pipe fitting and valves.											
SCHEME OF STUDY													
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Pipe and tube size, selection of size, flow controlling valve, Gate valve, Globe valve, Ball valve, Butter fly valve, Check valves, Diaphragm valve, Joints and Fittings.	Traditional Lecture Method	Faculty will explain learning content. To identify students weakness assignment will be given and accordingly remedial and tutorials will be taken.	10	2	models of valve and pumps actual fittings charts showing construction details & valve, pump and fittings							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal						
	Paper Pen Test	Theory question (including simple numerical problem) related to the learned content will be asked in the test paper	10	Test Paper + Rating Scale			Internal						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Nil													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					C	0	2				5	2	
COURSE NAME		FLUID FLOW OPERATIONS AND MACHINERY											
CO Description		Student will be able to select fittings and machinery for given fluid flow system.											
LO Description		Student will be able to explain construction and working of pumps.											
SCHEME OF STUDY													
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Classification of pumps Construction and working of centrifugal pump. Developed head, Cavitation, suction lift, NPSH, capacity, power and speed, priming, characteristics curves. Construction and working of Reciprocating Pump and Gear Pump. Elementary idea about, compressors, blowers and jet ejector.	Traditional Lecture Method	Faculty will explain learning content. To identify students weakness assignment will be given and accordingly remedial and tutorials will be taken.	12	2	Suggested text book handouts power point models of pumps actual charts showing construction details of pump.							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal						
	Theory Exam	Theory questions related to the learned content will be asked in the university question paper	15	Question paper			External						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Nil													

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

COURSE NAME	FLUID FLOW OPERATIONS AND MACHINERY
CO Description	Student will be able to select fittings and machinery for given fluid flow system.
LO Description	Student will be able to explain metering of fluids in pipe and open channels.

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Principal, construction and working of venturimeter, orificemeter, rotameter and pitot tube. Classification of notches and weir Discharge over rectangular and triangular notch.	Traditional Lecture Method	Faculty will explain learning content. To identify students weakness assignment will be given and accordingly remedial and tutorials will be taken.	12	2	Suggested text book handouts power point	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
	Theory Exam	Theory questions related to the learned content will be asked in the university question paper	10	Question paper	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Nil

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					C	0	2				5	4	
COURSE NAME	FLUID FLOW OPERATIONS AND MACHINERY												
CO Description	Student will be able to select fittings and machinery for given fluid flow system.												
LO Description	Student will be able to calculate discharge through pipe by venturi meter and orifice meter in a given system.												
SCHEME OF STUDY													
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Perform in laboratory to verify discharge coefficient.	Lab - demonstration	Faculty will explain the content in lab and demonstrate how to take reading. How these observation are use to calculate discharge coefficient. Students will practice under the guidance of faculty.		10	Experiment Setup Lab Manual							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal						
	Laboratory Test by observation	Examiner will ask to students to take reading and then calculate in front of him and will asses correctness of result	10	Rating Scale			External						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Nil													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					C	0	2				5	5	
COURSE NAME		FLUID FLOW OPERATIONS AND MACHINERY											
CO Description		Student will be able to select fittings and machinery for given fluid flow system.											
LO Description		Student will be able to calculate discharge by triangular and rectangular notch for given system.											
SCHEME OF STUDY													
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Perform in laboratory to verify discharge coefficient.	Lab - demonstration	Faculty will explain the content in lab and demonstrate how to take reading. How these observation are use to calculate discharge coefficient. Students will practice under the guidance of faculty.		12	Experiment Setup Lab Manual							
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal						
	Laboratory Test by observation	Examiner will ask to students to take reading and then calculate in front of him and will asses correctness of result	10	Rating Scale			External						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Nil													