K.S. GROUP OF INSTITUTIONS

K.S. SCHOOL OF ENGINEERING AND MANAGEMENT

#15, Mallasandra, Near Vajarahalli, Off. Kanakapura Road, Bengaluru - 560 109

KSSEM
K S SCHOOL OF ENGINEERING AND MANAGEMENT

Laboratory Certificate

This is to certify that

Mr. / Ms. Archana. V

has satisfactorily completed the course of experiment in Environmetal Engineering *Laboratory, Code* BCV504

Prescribed by Visvesvaraya Technological University, Belagavi for the V *Semester B.E.* Civil *branch in this college during in the academic year 20* 24 *- 20* 25

Name of the Candidate : Archana : V

USN : 1KG22CV001 Lab (with code) .....

Marks	
Maximum	Obtained
15	15

Signature of the Teacher

Date :

Head of the Department
Professor & Head
Dept. of Civil Engineering
K.S. Group of Institutions
K.S. School of Engineering & Management
Bangalore-560 062.

Particulars of the Experiments Performed

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Expt. No.	Date	Title of the Experiment	Page No.	Marks Awarded	Remarks
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02	17/9/24	Determination of Electrical Conductivity	03	10	
03	17/9/24	Determination of turbidity	04	10	
04	30/9/24	Determination of Alkalinity	06	10	
05	30/9/24	Determination of Acidity	08	10	
06	8/10/24	Determination of Chlorides	10	10	
07	15/10/24	Determination of solids		10	
		in sewage.	12		
08.	22/10/24	Determination of Total		10	
		Hardness	16		
09	5/11/24	Determination of Chlorine (Iodometric Method)	19	10	
10	5/11/24	Determination of Residual		10	
		Chlorine	21		
11	19/11/24	Determination of Dissolved		10	
		Oxygen	23		
12	19/11/24	Determination of Biochemical		10	
		Oxygen Demand	26		
13		Determination of COD	29	10	
14		Air Quality Monitoring	31	10	

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PRACTICAL EXAMINATION / PROJECT VIVA- VOCE

University Seat Number: 1 K G 2 2 C V 0 0 1

Course/Branch: Civil

Subject: Environmental Engineering Lab Subject Code: B C V 5 0 4

Total number of supplements tied together: 1 + ____ = ____ Date: 19/12/2024 (D D M M Y Y Y Y)

Archana. U

Signature of the Candidate

Entries to be made by the examiners

SCHEME OF AWARDING MARKS

Practical Examination

a. Procedure & write up : 15% of Max. Marks

b. Conducting the practicals, Calculations, Graphs, Results, etc., : 70% of Max. Marks

c. Viva-voce : 15% of Max. Marks

Project viva -voce

a. Project Work : 40% of Max .Marks

b. Presentation : 30% of Max .Marks

c. Viva-voce : 30% of Max .Marks

Question Number	Marks Awarded			
	a	b	c	d
1		Procedure		08
2		Conduction		08
3		Viva		04
4				

Total Maximum Marks: 20 Total Marks obtained: 20

Marks awarded in words: Zero Zero

Total Maximum Marks: ____ Total Marks obtained: ____

Marks awarded in words: ____

Examiner I

Name : Dr. Rashmi H R

Signature with Date : 19/12/24

Examiner II

Name : Pallavi M

Signature with Date : 19/12/24

5a) To determine suspended solids of a given sample of sewage water.

b) To determine Acidity of a given sample of water.

5a) Procedure:-

1) Take the weight of filter paper, W_1 gms.

2) Take clean porcelain dish and fill it with the known amount of sample filtering it through filter paper.

3) Keep the crucible in oven and allow the water to evaporate

4) Note down the weight of filter paper after the evaporation. W_2 gms.

Formula:

$$\text{Suspended Solids} = \frac{W_2 - W_1}{\text{ml of sample taken}} \times 1000$$

$W_1 = 1.01$ gm

$W_2 = 1.06$.

$$= \frac{1.06 - 1.01}{10} \times 1000 = 5 \text{ mg/l}$$

Result:- The suspended solids present in given wastewater sample = 5 mg/l.

5b) Procedure: (Methyl Orange Acidity)

1) Take 50ml of sample in 250ml of conical flask.
2) Add 1ml of sodium thiosulphate solution to remove residual Chlorine if present.
3) Add 2-3 drops of methyl orange indicator. If the solution turns yellow methyl orange acidity is absent
4) If faint orange colour appears, titrate it against 0.02N NaOH solution till the solution turns to yellow.
5) Note down the volume of titrant used. (CV_1) ml.

Procedure: (Phenophthalein Indicator).

1) Carry out 8 steps in above procedure.
2) Add 2-3 drops of phenophthalein indicator.
3) If the solution is colorless, titrate against 0.02N NaOH till the solution turns to pink.
4) Note down the volume of titrant used (V_2) ml.

Observation:

Conical flask : 50ml of sample

Burette : Standard NaOH solution.

Indicator : Methyl Orange and phenophthalein Solution.

Endpoint : Methyl Orange - faint orange to yellow.
Phenophthalein - Colorless to pink.

Tabular Column:

Sl No.	Sample Indicator used	Burette Reading			Vol. of titrant used (ml)
		I	F	F-I	
1	Methyl Orange	0	0	0	$V_1 = 0$ ml
2	Phenophthalein	0	1.2	1.2	$V_2 = 1.2$ ml

Formula:

Methyl Oranange Acidity as $CaCO_3$ (mg/l ≠) = $\frac{V_1 \times N \times 50 \times 1000}{\text{ml of sample taken}}$

V - Volume of titrant consumed

N - Normality of titrant.

$= \frac{0}{\quad}$ mg/l.

Phenophthalein Acidity or Total Acidity as $CaCO_3$ (mg/l)

$= \frac{V_2 \times N \times 50 \times 1000}{\text{ml of sample taken.}}$

$= \frac{1.2 \times 0.02 \times 50 \times 1000}{50}$ mg/l.

$= \underline{24 \text{ mg/l}}$

Date : 19/12/24

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1KG22CV001
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Result: Methyl Orange Acidity as $CaCO_3$ (mg/l) = 0 mg/l

Phenophthalein Acidity or Total Acidity as $CaCO_3$

= 24 mg/l

19/12/24