Appendices

Appendix 1

MacConkey agar

Peptone	20.0g
Lactose	10.0g
Bile salt	5.0g
Sodium chloride	5.0g
Neutral red	0.075g
Agar	12.0g

Preparation

5.2g of MacConkey agar powder were suspended in 100ml distilled water and sterilized by autoclaving at 121°C for 15 minutes, then cooled to 50°C and poured into sterile Petri dishes the poured plate were left to solidify at room temperature.

Appendix 2

Nutrient agar

Lab-lemco powder	1.0g
Yeast extracts	2.0g
Peptone	5.0g
Sodium chloride	5.0g
Agar	15.0g

Preparation

2.8g of nutrient agar powder were suspended in 100ml of distilled water, then sterilized by autoclaving at 121°C for 15 minutes, cooled to 50°C and poured into sterile Petri dishes

Appendix 3

Blood agar

Nutrient agar	500ml
Sterile defibrinated blood	25ml

Preparation

Sterilized nutrient agar cooled to 50°C, the sterile blood was added and mixed gently to avoid air bubbles forming, and the 15ml amounts were dispensed aseptically in sterile Petri dishes.

Appendix 4

Kliglar iron agar (KIA)

Lab-lemco powder	3.0g
Yeast extracts	3.0g
Peptone	20.0g
Sodium chloride	5.0g
Lactose	10.0g
Dextrose (glucose)	1.0g
Ferric citrate	0.3g
Sodium thiosulphate	0.3g

Phenol red	0.05g
Agar	12.0g

Preparation

5.5 g of kliglar iron agar powder were suspended into 100 of distilled water, sterilized by autoclaving at 121℃ for 15minutes and cooled to 50 and poured into sterile tubes and allowed to solidify in slope position.

Appendix 5

Koser citrate media

Sodium ammonium	1.5g
Potassium dihydrogen phosphate	1.0g
Magnesium sulphate	0.2g
Sodium citrate	2.5g
Bromothymol blue	0.016g

Preparation

0.52 g were suspended into 100ml of distilled water, then sterilized by autoclaving at 121℃ for 15 minutes then poured in sterile test tubes.

Appendix 6

Peptone water

Peptone	2g
Sodium chloride	1g
Distilled water	200ml

Preparation

3g of peptone water powder were dissolved into 200ml distilled water , then sterilized by autoclave at 121°C for 15minutes then cooled and poured in sterile test tubes.

Appendix 7

Christensen's urea agar

Agar	15g/L
Peptone	1g/L
Glucose	1g/L
Phenol red	0,012g/L
Potassium dihydrogen phosphate	0.8g/L
Sodium chloride	5.0g/L
Disodium phosphate	1.2g/L

Preparation

2.4g of urea agar powder were suspended in 95% of distilled water and then sterilized by autoclaving at 121°C for 50°C. 5ml of 40% of urea solution was added to the media and mixed well then poured into sterile tubes and allowed to solidify in slope position.

Appendix 8

Normal saline

Sodium chloride	4.5g
Distilled water	500ml

Preparation

2.5g sodium chloride were dissolved into 500ml distilled water, then sterilized by autoclave at 121℃ for 15 minutes

Appendix 9

Gram stain

Crystal violet

Crystal violet	20g/L
Ammonium oxalate	9g/L
Ethanol or methanol, absolute	95ml
Distilled water	1 liter

Preparation

20g Crystal violet were weighted and added to 1litre distilled water, then absolute ethanol was added, then ammonium oxalate was dissolved in 200ml of distilled water, were added to the stain and marked up to the 1 liter with distilled water.

Lugol's iodine solution

Potassium iodide	20g/L
Iodide	10g/L
Distilled water	1 liter

Preparation

20g of Potassium iodide were dissolved into 1 litre distilled water, and then 10g iodine was added and mixed well.

Absolute alcohol 95%

Preparation

95% of ethanol solution prepared in water by distillation of solution which results from fermentation of sugars.

Safranin

2.5 grams safranin O and 100 ml of 95% ethanol were added to 90ml of distilled water.

Appendix

Kovac's Indole reagent

4-Dimethylaminobenzaldehyde	5g
Isoamyl alcohole(3-methyle-butanol)	75ml
Hydrochloric acid, concentrated	25ml

Preparation

5g of para-dimethlamino-bezldehyde were added to 75ml amylacohol, then heated to 55 until crystal dissolved, 25ml of concentrated hydrochloric acid were added after the mixture was cooled.