



PC-1033

**119<sup>th</sup> IAMM EQAS Microbiology: Bacteriology/ Serology**  
**CMC MICRO EQAS**  
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FEBRUARY 2025

**119<sup>th</sup> EQAS PACKAGE**

MEMBER ID:

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**Last date for receiving reports: APRIL 30<sup>th</sup>, 2025****FEBRUARY 2025/ BACTERIOLOGY SMEARS:****Question:** Carry out the appropriate staining procedure and document the relevant observation.**Evaluation format:**Presence and grading of host cells & debris (many/ moderate/few/no) **(1 mark)**Presence & grading of organism/s gram stain finding, morphology (shape), arrangement and any other special characteristics observed **(2 marks)****Interpretation:** Probable organism OR Impression- as asked in the question **(1 mark)**

Exercise Number	Question	Report	Evaluation		
SM1	Please carry out a Gram stain on the given fixed smear prepared from a URINE specimen obtained from a 58-year-old man in ICU- Day 6, with new onset fever.	<b>Presence and grading of Host cells (1 mark):</b> Few epithelial cells seen. Moderate numbers of pus cells seen.  <b>Description of Organism/s (2 mark):</b> Moderate numbers of Gram positive budding yeast cells of 3-5µ in size, with scanty pseudohyphae seen.	0	0.5	1
			1.5	2	2.5
			3	3.5	4

**\* Clinical Interpretation (1 mark): [Please note: Not probable organism]****Hospital acquired urinary tract infection.**

SM2

Please carry out a Gram stain on the given fixed smear prepared from a BLOOD culture specimen obtained from 2-day-old baby with fever, tachycardia, and tachypnoea.

Description of Organism/s (2 mark):		
<i>Gram Positive cocci 1-1.5 micron in size in short and long chains and in singles seen.</i>	0	0.5
<i>Gram Positive cocci 1-1.5 micron in size in short and long chains and in singles seen.</i>	1.5	2

\* Probable organism (1 mark):

*Streptococcus species - probably  
Beta haemolytic streptococcus  
species*

SM3

Please carry out a Gram stain on the given fixed smear prepared from a BLOOD culture collected from 29-year-old salesman seen in OPD with high grade fever and chills along with diarrhoea, for 5-days.  
He is not a smoker /alcoholic and has had no significant past illness.

Description of Organism/s (2marks):

*Slender gram negative bacilli of 2-3 micron in size arranged in single, small groups.*

\* Probable organism (1 mark):

*Salmonella species, probably  
serotype - Typhi  
Salmonella enterica serotype Typhi*

0	0.5	1
1.5	2	2.5

3

3

## FEBRUARY 2025/ BACTERIOLOGY CULTURE:

**Question:** A freeze-dried (lyophilized) culture of an organism isolated from a clinical specimen is given. Carry out the appropriate techniques for each exercise and identify the pathogen. Carry out the antimicrobial susceptibility testing according to the panel given below.

### INSTRUCTION: RECONSTITUTION OF LYOPHILIZED CULTURES

**The vial containing freeze-dried material must be handled carefully. These vials contain infectious organisms.  
Please follow standard safety procedures and usual universal precautions when handling this material.**

**It is advised to open the vial in a Bio-safety cabinet Type 2A2.**

#### **Opening of the lyophilized vial**

1. The lyophilized material provided must be rehydrated. When reconstituting them, exercise extreme caution not to create aerosols or spills.
2. Do not mouth pipette.
3. Reconstitute when you are ready to inoculate onto culture plates.
4. Do not remove the whole cap. Lift only the pre-cut section of the metal cap.
5. Disinfect the rubber stopper with 70% alcohol/ rectified spirit.
6. With a sterile needle and syringe pierce the rubber cap and inoculate the rehydrating broth.

#### **Re-hydration and Recovery**

1. Add about **0.5ml of Nutrient broth** using a sterile needle and syringe.
2. Gently swirl the vial and allow 5-10 minutes for the dried material to rehydrate completely.
3. Hold the vial vertically.
4. Draw the reconstituted fluid up into the syringe slowly.
5. Separate the needle tip from the syringe carefully.
6. Inoculate the specimen / organism appropriate enriched and/or selective media to facilitate recovery of the organisms.
7. Incubate both vial with remaining contents and plate cultures in the appropriate environment – ambient / CO<sub>2</sub> incubator at 35-37°C as per routine procedures.
8. Overnight vial contents can be sub-cultured again, if required.
9. After use decontaminate and then discard the vial according to your hospital / lab policy.

**Note:** The viability and culture purity of all batches of lyophilized cultures have been verified prior to packing. The identification has been confirmed by conventional, automated and molecular methods.

## INFORMATION ON THE EVALUATION FORMAT FOR CULTURE AND SUSCEPTIBILITY EXERCISES

### **EVALUATION FORMAT:**

#### **Culture microscopy & identification:**

Microscopy (1mark), culture characteristics (2 mark)

Biochemical key identification characteristics (2 marks)

Final identification (2 marks)

Susceptibility testing: (2 marks per drug)

For culture identifications or susceptibility tests that have been performed by automated systems, the printouts of the automated report MUST be attached along with the report for the evaluator's reference.

#### **Susceptibility reports:**

Provide only ONE FINAL susceptibility report for each drug tested.

If two reports with discrepant interpretations are reported, they will be marked as an incorrect answer.

Incomplete forms will NOT be evaluated.

### **✓ THE REPORT AS ENTERED IN THE SPACE PROVIDED ON THE FORM WILL BE CONSIDERED AS THE FINAL REPORT SUBMITTED FOR EVALUATION**

**Regarding AST, the first package must always follow the standard guidelines from the previous year, and the other two packages must follow the guidelines from this year.**

### **SUSCEPTIBILITY INTERPRETATION ERRORS:**

Minor error (mE) : Susceptible / resistant isolate reported as intermediate susceptible (1 mark deducted)

Major error (ME) : Susceptible isolate reported as resistant (2 marks deducted)

Very major error (VME) : Resistant isolate reported as susceptible (3 marks deducted)

VITEK/ E-test MIC will be awarded the complete mark if the interpretation is consistent with the expected report.

### **INSTRUCTION: BROKEN OR MISSING SAMPLES**

1. The receipt of missing and damaged samples should be reported, along with supporting documents or photos, via email to [eqas@cmcvelllore.ac.in](mailto:eqas@cmcvelllore.ac.in) or by post to the PTP coordinator for all communications participants are requested to mention their complete contact details: EQAS code number, name, address...etc.,
2. DO NOT retrieve any material from the vials broken/damaged.
3. Discard the vials as per laboratory Biomedical waste management policy.

**CU 2: Isolated from a FECES specimen collected from a 6-year-old child with abdominal pain.**

Microscopy Gram stain / motility	Culture characteristics	Biochemical identification MAIN / KEY identification characteristics required for the identification of the organism (Minimum: 3 KEY characteristics)	Method used in identification: (Please circle which is method has been used)			
<u>Gram stain -</u> Slender - 2 ends green negative bacilli <u>motility - Non motile</u>	<u>Blood agar - grey shiny .</u> <u>translucent, round colonies</u> <u>of 2 mm with convex surface</u> <u>non hemolytic</u> <u>MacConkey Agar - late</u> <u>lactose fermenting colonies.</u> <u>Xylose Lysine Difrifuent</u> <u>medium - pink pinpoint</u> <u>colonies .</u>	<u>Oxidase - Negative</u> <u>Catalase - Positive</u> <u>Triple sugar iron medium - alkaline</u> <u>slender slant with acid built</u> <u>with minimal gas and no H<sub>2</sub>S</u> <u>production.</u> <u>Citrate medium - Negative ,</u> <u>Mac medium - Negative</u> <u>Onchole - Negative .</u>	<b>Manual</b> <b>Automation</b> <b>Detail:</b>			
<b>FINAL Identification of given organism</b>	<b>Genus</b> <i>Shigella</i>	<b>Species</b> <i>sonnei</i>	<b>Serotype (if applicable)</b>			
<b>Method: Manual / Automation</b>	<b>Ampicillin</b>	<b>Cotrimoxazole</b>	<b>Ciprofloxacin</b>	<b>Ceftriaxone</b>	<b>Azithromycin</b>	<b>Meropenem</b>
<b>For Manual: Zone size (mm) OR MIC(<math>\mu</math>g/ml)</b>	1 No zone OR <i>R.</i>	1 No zone <i>R.</i>	No zone <i>R.</i>	1 mm Resistant <i>R.</i>	21 mm <i>S</i>	24 mm <i>S</i>
<b>Interpretation (S / MS / R)</b>	<i>R</i>	<i>R</i>	<i>R</i>	<i>R</i>	<i>S</i>	<i>S</i>
<b>For automated susceptibility: Provide Automated report HERE:</b>	<i>Qn</i> (D)	$\geq 32^0$	$\geq 4$ (D)	16 (D)	H (S)	$\leq 0.95$ (S)

**CU 1: Isolated from a BLOOD culture of a 66-year-old diabetic gentleman, admitted in the ICU.** - CU 1

Microscopy Gram stain / motility	Culture characteristics	Biochemical identification MAIN / KEY identification characteristics required for the identification of the organism (Minimum: 3 KEY characteristics)	Method used in identification: (Please circle which is method has been used)				
<u>gram stain -</u>  2-4 m long slender gram negative bacilli arranged in singles.  motility - motile	<u>Blood Agar</u> - grey moist, flat, irregular margins, non hemolytic colonies.  <u>MacConkey Agar</u> - Non lactose fermenting colonies.	Oxidase - Positive. Triple sugar iron medium - alkaline no change, no gas or no H <sub>2</sub> S production. <u>Litmus Milk</u> - <del>coagulase</del> positive. Urea medium - Negative <u>Indole</u> - negative	<b>Manual</b>  <b>Automation Detail:</b>				
FINAL Identification of given organism	Genus <i>Pseudomonas</i>	Species <i>aeruginosa</i> .	Serotype (if applicable)				
Method: Manual / Automation	Ceftazidime	Cefepime	Azteronam	Imipenem	Meropenem	Meropenem	Colistin
For Manual: Zone size (mm) OR MIC(µg/ml)	No zone	No zone	8 mm	No zone	No zone	14 mm	
Interpretation (S / MS / R)	R.	R.	R.	R.	R.	R.	MS
For automated susceptibility: Provide Automated report HERE:	$\geq 64 \text{ } \textcircled{R}$	$\geq 32 \text{ } \textcircled{R}$		$\geq 16 \text{ } \textcircled{R}$	$\geq 16 \text{ } \textcircled{R}$		

CU 3: Isolated from a URINE specimen of an 18-year-old lady with dysuria for 2 days.

Microscopy Gram stain / motility	Culture characteristics	Biochemical identification MAIN / KEY identification characteristics required for the identification of the organism (Minimum: 3 KEY characteristics)	Method used in identification: (Please circle which is method has been used)
Gram stain - 1 mm size Gram positive cocci arranged in clusters.	Blood agar - White opaque 1-2 mm tan hemolytic colonies with convex surface and entire margin. Mac Conkey agar - No growth Urea agar - White opaque colonies.	Lactose - Positive, Slide coagulase - Negative Tube coagulase - Negative. Novobiocin - Resistant.	Manual
FINAL Identification of given organism	Genus <i>Staphylococcus</i>	Species saprophyticus.	Automation Detail:
Method: Manual / Automation	Nitrofurantoin Cotrimoxazole Ciprofloxacin Novobiocin Linezolid	For Manual: Zone size (mm) OR MIC( $\mu$ g/ml)	Serotype (if applicable)
Interpretation (S / MS / R)	S S S R. R.S	$\geq 36$ mm $\leq 10$ $\leq 0.5$ 14 mm $\geq 0.5$	36 mm
For automated susceptibility: Provide Automated report HERE:	$\leq 16$ (S) $\leq 10$ (S) $\leq 0.5$ (S)	-	2 (S)

Please indicate the exercises that you have participated in:

Bacteriology smears       Cultures       Serology

Laboratory head name: Dr. Sadiye Sultana.

Signature / Seal: TRUST LAB DIAGNOSTICS PRIVATE LTD, Date of dispatch: 22/04/2025-  
L4 DERRAGAD.

Member ID: 

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SM1	SM2	SM3	CU1	CU2	CU3	SE1	SE2	SE3	Marks obtained
4	3	3	19	19	17	2	2	2	Maximum marks

TOTAL MARKS:

Evaluator name /  
Signature \_\_\_\_\_ Date \_\_\_\_\_

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