



# MICROBIOLOGY EXTERNAL QUALITY ASSURANCE SCHEME

Under the aegis of Indian Association of Medical Microbiology

## IAMM EQAS New Delhi

Department of Clinical Microbiology and Immunology  
Sir Ganga Ram Hospital, Rajinder Nagar, New Delhi-110060



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Dr. Jaswinder K. Oberoi  
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PT Quality Manager - EQAS

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### Result ( Code No: DLH252 / Bansal Hospital, Bhopal )

Batch Name	24th QC, July	Batch Marks	76
Start By Date	26-Sep-2020	Submit By Date	06-Nov-2020

#### Q 1. Smear :

**1.1 : ET Sample:** A 75 year old man admitted in ICU with ventilatory support. Smear prepared from ET aspirate is provided. Perform Gram stain & report as below. (Marks: 5)

**Expected Result (Cells):**—Moderate (1) number of PMN (1) cells seen (Marks :2)

**Participant's Answer (Cells):**—Plenty of polymorphonuclear neutrophils (>25/HPF) and occasional epithelial cells seen (Marks :2)

**Expected Result (Organism):**—Many (1) GNCBs (1) seen. (Marks :2)

**Participant's Answer (Organism):**—Moderate number of gram negative coccobacilli seen. (Marks :2)

**Expected Result (Interpretation):**—VAP due to *Acinetobacter baumannii*. (Marks :1)

**Participant's Answer (Interpretation):**—Pneumonia due to *Acinetobacter* spp. (Marks :1)

**Marks Obtained :— 5**

**1.2 : Peritoneal Fluid:** A 63 year old patient diagnosed as ovarian carcinoma on chemotherapy, admitted with abdominal distension. Smear prepared from peritoneal fluid is provided. Perform Gram stain & report as below. (Marks: 5)

**Expected Result (Cells):**—Few number of PMN cells & scanty lymphocytes seen. (Marks :1)

**Participant's Answer (Cells):**—No polymorphonuclear cells and occasional epithelial cells seen. (Marks :1)

**Expected Result (Organism):**—Many Budding yeast cells with pseudohyphae seen. (Marks :3)

**Participant's Answer (Organism):**—Plenty of oval budding yeast cells with pseudohyphae seen. (Marks :3)

**Expected Result (Interpretation):**—Suggestive of *Candida peritonitis*. (Marks :1)

**Participant's Answer (Interpretation):**—Fungal peritoneal infection due to *Candida* spp. (Marks :1)

**Marks Obtained :— 5**

**1.3 : Stool Sample:** A 55 year old male, HIV positive presented with loose stools. Smear prepared from stool specimen is provided. Perform Kinyoun stain & report as below. (Marks: 5)

**Expected Result (Findings):**—Many acid fast (1) oocysts seen (1). (Marks :2)

**Participant's Answer (Findings):**—Moderate number of spherical acid fast structure measuring 4-6 micrometer in diameter resembling oocyst of *Cryptosporidium* seen. (Marks :2)

**Expected Result (Interpretation):**—Suggestive of diarrhoea due to *Cryptosporidium*. (Marks :3)

**Participant's Answer (Interpretation):**—Oocyst of *Cryptosporidium* seen in stool of an immunosuppressed male patient suggestive of opportunistic parasitic infestations. *Cryptosporidiosis* due to acid fast oocyst of *Cryptosporidium*. (Marks :3)

**Marks Obtained :— 5**

#### Q 2. Culture/Sensitivity :

**2.1** Three freeze dried (lyophilized) cultures of bacteria are provided. Identify and perform the antibiotic sensitivity testing. Use current CLSI guidelines wherever applicable for interpretation of antimicrobial sensitivity. EUCAST guideline can be used wherever CLSI guidelines are not available. A= Automated/M= Manual; tick whichever applicable. Attempt only one: Either "A" or "M". Kindly do not report both, even if done. Organism Isolated From Pus: (Marks: 15)

		Genus	Species		
Participant's Answer		<i>Staphylococcus</i> (Marks: 3)	<i>aureus</i> (Marks: 2)		
Antibiotics	Cefoxitin	Erythromycin	Clindamycin	Vancomycin	Co-trimoxazole
Expected Result	S(Marks: 2)	S(Marks: 2)	S(Marks: 2)	S(Marks: 2)	S(Marks: 2)
Participant's Answer	S (Marks: 2)	S (Marks: 2)	S (Marks: 2)	S (Marks: 2)	S (Marks: 2)
Participant's Test Method	Vitek -2	Vitek -2	Vitek -2	Vitek -2	Vitek -2
Correct:-- 2 Minor Error:-- 1 Major Error:-- 0 Very Major Error:-- (-1)					
Examiner Comments: As per the CLSI antibiotic susceptibility interpretation for Vancomycin is based on MIC result only. Disc diffusion is not a valid method.					
Marks Obtained: 15					

2.2 Organism Isolated From BAL: (Marks: 15)

		Genus	Species		
Expected Result (Identification of given organism)		<i>Streptococcus</i> (Marks: 3)	<i>pneumoniae</i> (Marks: 2)		
Participant's Answer		<i>Streptococcus</i> (Marks: 3)	<i>pneumoniae</i> (Marks: 2)		
Antibiotics	Penicillin	Ceftriaxone	Levofloxacin	Erythromycin	Vancomycin
Expected Result	S(Marks: 2)	S(Marks: 2)	S(Marks: 2)	S(Marks: 2)	S(Marks: 2)
Participant's Answer	S (Marks: 2)	S (Marks: 2)	S (Marks: 2)	S (Marks: 2)	S (Marks: 2)
Participant's Test Method	Vitek -2	Vitek -2	Vitek -2	Vitek -2	Vitek -2
Correct:-- 2 Minor Error:-- 1 Major Error:-- 0 Very Major Error:-- (-1)					
Examiner Comments: Ceftriaxone susceptibility for <i>S. pneumoniae</i> is recommended by MIC method only as per CLSI guidelines. Penicillin susceptibility for <i>S. pneumoniae</i> is recommended by MIC method only as per CLSI guidelines. However Oxacillin disc diffusion testing can be used as a surrogate marker to predict penicillin susceptibility.					
Marks Obtained: 15					

2.3 Organism Isolated from Stool: (Marks: 15)

		Genus	Species		
Expected Result (Identification of given organism)		<i>Vibrio</i> (Marks: 3)	<i>cholerae</i> (Marks: 2)		
Participant's Answer		<i>Vibrio</i> (Marks: 3)	<i>cholerae</i> (Marks: 2)		
Antibiotics	Cefotaxime	Ampicillin	Tetracycline	Ciprofloxacin	Co-trimoxazole
Expected Result	S(Marks: 2)	S(Marks: 2)	S(Marks: 2)	S(Marks: 2)	R(Marks: 2)
Participant's Answer	S (Marks: 2)	I (Marks: 1)	S (Marks: 2)	S (Marks: 2)	R (Marks: 2)
Participant's Test Method	Disc diffusion	Vitek -2	Disc diffusion	Vitek -2	Vitek -2
Correct:-- 2 Minor Error:-- 1 Major Error:-- 0 Very Major Error:-- (-1)					
Marks Obtained: 14					

Q.3.: Serology:

3.1 : Please carry out following serological tests on the given samples. (Marks: 8)

Q.No.	3.1.1	3.1.2
Test	RPR	RA factor
Expected Result	Positive (Marks: 4)	Negative (Marks: 4)

Positive (Not evaluated.)

Negative (Marks: 4)

Comments

RPR results have not been evaluated. This is due to the varied response of >30% of the participating centers.

Marks Obtained :- 4

3.2 : Perform the Blood Borne Viral (BBV) serology: HBsAg, HCV and HIV antibody on both the samples (Sample nos. 3.2.1 & 3.2.2)  
(Marks: 12)

Sample		HIV Antibody	HBsAg	HCV Antibody
3.2.1	Expected Result	Non-Reactive (Marks: 2)	Reactive (Marks: 2)	Non-Reactive (Marks: 2)
	Participant's Answer	Non-Reactive ( Marks: 2)	Reactive ( Marks: 2)	Non-Reactive ( Marks: 2)
3.2.2	Expected Result	Non-Reactive (Marks: 2)	Non-Reactive (Marks: 2)	Non-Reactive (Marks: 2)
	Participant's Answer	Non-Reactive ( Marks: 2)	Non-Reactive ( Marks: 2)	Non-Reactive ( Marks: 2)

Marks Obtained :- 12

Grand Total Marks : 76  
Marks Obtained: 75

Note : This is computer generated report, does not require signature of the EQAS provider

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### Result ( Code No: DLH252 / Bansal Hospital, Bhopal )

Batch Name	20th QC(March)	Batch Marks	78
Start By Date	30-Mar-2019	Submit By Date	08-May-2019

#### Q.1. Smear :

**1.1 : BAL sample. A 65 year old male patient presents with a history of fever & persistent cough since 3 days. Chest X-ray shows left lower consolidation. A smear from BAL sample is provided. Perform Gram Stain & interpret as below. (Marks: 5 )**

**Expected Result (Cells):**—Many PMNs seen. (Marks :2)

**Participant's Answer (Cells):**—Few pus cells (neutrophils)1-4/OIF and scanty lymphocytes 0-1/10 OIF seen. (Marks :2)

**Expected Result (Organism):**—Many gram positive diplococci seen. (Marks :2)

**Participant's Answer (Organism):**—Capsulated, lancetolate shaped, Gram Positive Cocci in pairs seen. (Marks :1)

**Expected Result (Interpretation):**—Suggestive of pneumonia due to Streptococcus pneumoniae. (Marks :1)

**Participant's Answer (Interpretation):**—Suggestive of lower respiratory tract infection due to Streptococcus pneumoniae. (Marks :1)

Participant's Comments	Confirmation will be done by Culture, Biochemical testing, and quellung reaction.
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Marks Obtained :- 4

**1.2 : Sputum sample. A 4 year old child presents with history of fever and breathlessness since 5 days. A smear from sputum sample is provided. Perform Gram stain & interpret as below. (Marks: 5 )**

**Expected Result (Cells):**—Many PMNs, scanty squamous epithelial cells seen. (Marks :2)

**Participant's Answer (Cells):**—PMNs >25/LPF and Sq.Epithelial Cells <10/LPF (Marks :2)

**Expected Result (Organism):**—Many pleomorphic gram negative cocco bacilli seen. (Marks :2)

**Participant's Answer (Organism):**—Gram Negative Coccobacilli seen(GNCB). (Marks :1)

**Expected Result (Interpretation):**—Suggestive of pneumonia due to H.influenzae. (Marks :1)

**Participant's Answer (Interpretation):**—Suggestive of Lower Respiratory tract infection due to Gram Negative Coccobacilli. (Marks :0)

Participant's Comments	Confirmation will be done by Culture and Biochemical testing,
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Marks Obtained :- 3

**1.3 : CSF sample. A newborn male presents with fever, lethargy & poor feeding since 1 day. A smear from CSF specimen is provided. Perform Gram stain & interpret as below. (Marks: 5 )**

**Expected Result (Cells):**—Many PMNs. (Marks :2)

**Participant's Answer (Cells):**—Neutrophils (3-5/OIF) and RBCs (5-8/OIF) seen. (Marks :2)

**Expected Result (Organism):**—Many gram positive cocci in pairs & chains seen. (Marks :2)

**Participant's Answer (Organism):**—Intracellular, bean shaped, Gram Negative Diplococci seen. (Marks :0)

**Expected Result (Interpretation):**—Suggestive of meningitis due to group B Streptococcus. (Marks :1)

**Participant's Answer (Interpretation):**—Suggestive of Meningitis due to Neisseria meningitidis. (Marks :0)

Participant's Comments	Confirmation will be done by Culture and Biochemical testing.
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Marks Obtained :- 2

**Q 2. Culture/Sensitivity :**

2.1 Three freeze dried (lyophilized) cultures of bacteria are provided. Identify and perform the antibiotic sensitivity testing. Use current CLSI guidelines wherever applicable for interpretation of antimicrobial sensitivity. A= Automated/M= Manual; tick whichever applicable. Attempt only one: Either "A" or "M". Kindly do not report Both, even if done. Organism Isolated From Blood: (Marks: 15)

	Genus	Species
Expected Result (Identification of given organism)	<i>Enterobacter</i> (Marks: 3)	<i>cloacae</i> (Marks: 2)
Participant's Answer	<i>Enterobacter</i> (Marks: 3)	<i>cloacae</i> (Marks: 2)

Antibiotics	Ceftriaxone	Piperacillin/ Tazobactam	Imipenem	Gentamicin	Levofloxacin
Expected Result	R(Marks: 2)	R(Marks: 2)	R(Marks: 2)	S(Marks: 2)	R(Marks: 2)
Participant's Answer	R (Marks: 2)	R (Marks: 2)	R (Marks: 2)	S (Marks: 2)	R (Marks: 2)
Participant's Test Method	Vitek -2	Vitek -2	Vitek -2	Vitek -2	Disc diffusion

Correct:- 2 Minor Error:- 1 Major Error:- 0 Very Major Error:- (-1)

Marks Obtained: 15

2.2 Organism Isolated From Urine: (Marks: 15)

	Genus	Species
Expected Result (Identification of given organism)	<i>Escherichia</i> (Marks: 3)	<i>coli</i> (Marks: 2)
Participant's Answer	<i>Escherichia</i> (Marks: 3)	<i>coli</i> (Marks: 2)

Antibiotics	Ceftriaxone	Piperacillin/ Tazobactam	Amikacin	Co-trimoxazole	Nitrofurantoin
Expected Result	S(Marks: 2)	S(Marks: 2)	S(Marks: 2)	R(Marks: 2)	S(Marks: 2)
Participant's Answer	S (Marks: 2)	S (Marks: 2)	S (Marks: 2)	R (Marks: 0)	S (Marks: 2)
Participant's Test Method	Vitek -2	Vitek -2	Vitek -2	Vitek -2	Vitek -2

Correct:- 2 Minor Error:- 1 Major Error:- 0 Very Major Error:- (-1)

Examiner Comments: AST for Co-trimoxazole has not been evaluated. This is due to the varied response of >30% of the participating centers.

Marks Obtained: 13

2.3 Organism Isolated From Pus: (Marks: 15)

	Genus	Species
Expected Result (Identification of given organism)	<i>Staphylococcus</i> (Marks: 3)	<i>aureus</i> (Marks: 2)
Participant's Answer	<i>Staphylococcus</i> (Marks: 3)	<i>aureus</i> (Marks: 2)

Antibiotics	Cefoxitin	Erythromycin	Clindamycin	Co-trimoxazole	Vancomycin
Expected Result	S(Marks: 2)	R(Marks: 2)	R(Marks: 2)	S(Marks: 2)	S(Marks: 2)
Participant's Answer	S (Marks: 2)	R (Marks: 2)	R (Marks: 2)	S (Marks: 2)	S (Marks: 2)
Participant's Test Method	Vitek -2	Vitek -2	Vitek -2	Vitek -2	Vitek -2

Correct:- 2 Minor Error:- 1 Major Error:- 0 Very Major Error:- (-1)

Participant's Comments: Inducible Clindamycin Resistance detected.

Examiner Comments: As per the CLSI antibiotic susceptibility interpretation for vancomycin is based on MIC result only. Disc diffusion is not a valid method.

Marks Obtained: 15

**Q 3. Serology:**

3.1 : Please carry out following serological tests on the given samples. (Marks: 8)

Q.No.	3.1.1	3.1.2
Test	RA factor	Rubella IgG antibody
Expected Result	Negative (Marks: 4)	Positive (Marks: 4)
Participant's Answer	Negative (Marks: 4)	Positive (Marks: 4)
Center Comments	3.1.2 = Rubella IgG antibody conc 88 IU/ml. Person is immune to Rubella.	

Marks Obtained :- 8

3.2 : Perform the Blood Borne Viral (BBV) serology: HBsAg, HCV and HIV antibody on both the samples(Sample nos. 3.2.1 & 3.2.2) (Marks: 12 )

Sample		HIV Antibody	HBsAg	HCV Antibody
3.2.1	Expected Result	Negative (Marks: 2)	Positive (Marks: 2)	Negative (Marks: 2)
	Participant's Answer	Non-Reactive ( Marks: 2)	Positive ( Marks: 2)	Non-Reactive ( Marks: 2)
3.2.2	Expected Result	Negative (Marks: 2)	Negative (Marks: 2)	Negative (Marks: 2)
	Participant's Answer	Non-Reactive ( Marks: 2)	Negative ( Marks: 2)	Non-Reactive ( Marks: 2)

Center Comments	HBsAg positive means that the person is infected with Hepatitis B virus.
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Marks Obtained :- 12

**Grand Total Marks : 78**  
**Marks Obtained: 72**

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PT Technical Manager - EQAS

### Result ( Code No: DLH252 / Bansal Hospital, Bhopal )

Batch Name	21st QC, July	Batch Marks	80
Start By Date	12-Jul-2019	Submit By Date	20-Aug-2019

#### Q 1. Smear :

**1.1 : Sputum Sample:** A 25 year old male patient presenting with complaints of fever & cough for 3 weeks. Chest X-ray shows left hilar opacity. Perform ZN Stain & report as per RNTCP grading. (Marks: 5)

**Expected Result (Findings):**--Long, slender, beaded, acid fast bacilli seen 1-10/ oil immersion field. (Marks :3)

**Participant's Answer (Findings):**--Many Acid Fast Bacilli seen (mainly with beaded appearance). (Marks :3)

**Expected Result (Grading):**--2+ AFB seen. (Marks :2)

**Participant's Answer (Grading):**--Grade 3+ (Marks :2)

**Marks Obtained :- 5**

**1.2 : BAL Sample:** A 35 year old diabetic patient presenting with fever & cough for 3 months. Chest X - ray shows left sided cavitory lesion. Perform Gram stain & report as below. (Marks: 5)

**Expected Result (Cells):**--Many PMN cells & occasional squamous epithelial cells seen. (Marks :2)

**Participant's Answer (Cells):**--Many PMNs. (Marks :2)

**Expected Result (Organism):**--Few gram positive, filamentous branching bacteria seen. (Marks :2)

**Participant's Answer (Organism):**--Many Gram Positive thin filamentous branched bacilli seen. (Marks :2)

**Expected Result (Interpretation):**--Suggestive of Pneumonia due to Nocardia. (Marks :1)

**Participant's Answer (Interpretation):**--Suggestive of Cavitory Pneumonia due to Actinomycetes. (Marks :1)

**Marks Obtained :- 5**

**1.3 : Pus Sample:** A 28 year old female presenting with swelling in the gluteal region. Perform Gram stain & report as below. (Marks: 5)

**Expected Result (Cells):**--Moderate PMN cells seen. (Marks :2)

**Participant's Answer (Cells):**--Many PMNs seen. (Marks :2)

**Expected Result (Organism):**--Scanty gram negative bacilli seen. (Marks :2)

**Participant's Answer (Organism):**--Occasional stout Gram negative bacilli seen. (Marks :2)

**Expected Result (Interpretation):**--Abscess due to Gram negative bacteria. (Marks :1)

**Participant's Answer (Interpretation):**--Suggestive of gluteal abscess/ cellulitis due to Klebsiella (Gram Negative bacilli). (Marks :1)

**Marks Obtained :- 5**

#### Q 2. Culture/Sensitivity :

**2.1 Three freeze dried (lyophilized) cultures of bacteria are provided. Identify and perform the antibiotic sensitivity testing. Use current CLSI guidelines wherever applicable for interpretation of antimicrobial sensitivity. A= Automated/M= Manual; tick whichever applicable. Attempt only one: Either "A" or "M". Kindly do not report both, even if done. Organism Isolated From Pus: (Marks: 15)**

	Genus	Species
Expected Result (Identification of given organism)	<i>Proteus</i> (Marks: 3)	<i>mirabilis</i> (Marks: 2)

Answer	Proteus (Marks: 3)			mirabilis (Marks: 2)	
Expected Result	Cefuroxime R(Marks: 2)	Co-trimoxazole R(Marks: 2)	Meropenem S(Marks: 2)	Ampicillin R(Marks: 2)	Piperacillin/ Tazobactam S(Marks: 2)
Participant's Answer	R (Marks: 2)	R (Marks: 2)	S (Marks: 2)	R (Marks: 2)	S (Marks: 2)
Participant's Test Method	Vitek -2	Vitek -2	Vitek -2	Vitek -2	Vitek -2
Correct:-- 2 Minor Error:-- 1 Major Error:-- 0 Very Major Error:-- (-1)					
Participant's Comments: ESBL producing strain.					
Marks Obtained: 15					

## 2.2 Organism Isolated From Urine: (Marks: 15)

	Genus	Species
Expected Result (Identification of given organism)	<i>Klebsiella</i> (Marks: 3)	<i>pneumoniae</i> (Marks: 2)
Participant's Answer	<i>Klebsiella</i> (Marks: 3)	<i>pneumoniae</i> (Marks: 2)

Antibiotics	Amikacin	Cefepime	Cefuroxime	Meropenem	Nitrofurantoin
Expected Result	R(Marks: 2)	R(Marks: 2)	R(Marks: 2)	R(Marks: 2)	R(Marks: 2)
Participant's Answer	R (Marks: 2)	R (Marks: 2)	R (Marks: 2)	R (Marks: 2)	R (Marks: 2)
Participant's Test Method	Vitek -2	Vitek -2	Vitek -2	Vitek -2	Vitek -2
Correct:-- 2 Minor Error:-- 1 Major Error:-- 0 Very Major Error:-- (-1)					
Participant's Comments: Carbapenemase + or - ESBL strain,					
Marks Obtained: 15					

## 2.3 Organism Isolated from Vaginal swab: (Marks: 15)

	Genus	Species
Expected Result (Identification of given organism)	<i>Streptococcus</i> (Marks: 3)	<i>agalactiae (Group B Streptococci)</i> (Marks: 2)
Participant's Answer	<i>Streptococcus</i> (Marks: 3)	<i>agalactiae (Group B Streptococci)</i> (Marks: 2)

Antibiotics	Ampicillin	Ceftriaxone	Clindamycin	Erythromycin	Levofloxacin
Expected Result	S(Marks: 2)	S(Marks: 2)	R(Marks: 2)	R(Marks: 2)	R(Marks: 2)
Participant's Answer	S (Marks: 2)	S (Marks: 2)	R (Marks: 2)	R (Marks: 2)	R (Marks: 2)
Participant's Test Method	Vitek -2	Vitek -2	Vitek -2	Vitek -2	Vitek -2
Correct:-- 2 Minor Error:-- 1 Major Error:-- 0 Very Major Error:-- (-1)					
Participant's Comments: Inducible Clindamycin Resistance					
Marks Obtained: 15					

## Q 3.: Serology:

## 3.1 : Please carry out following serological tests on the given samples. (Marks: 8)

Q.No.	3.1.1	3.1.2
Test	CRP	RPR
Expected Result	Positive (Marks: 4)	Negative (Marks: 4)
Participant's Answer	Positive (Marks: 4)	Negative (Marks: 4)
Center Comments	CRP value 4.7 mg/dl	



ed :- 8

the Blood Borne Viral (BBV) serology: HBsAg, HCV and HIV antibody on both the samples (Sample nos. 3.2.1 & 3.2.2)  
(2)

Sample		HIV Antibody	HBsAg	HCV Antibody
3.2.1	Expected Result	Non-Reactive (Marks: 2)	Non-Reactive (Marks: 2)	Reactive (Marks: 2)
	Participant's Answer	Negative ( Marks: 2)	Negative ( Marks: 2)	Positive ( Marks: 2)
3.2.2	Expected Result	Non-Reactive (Marks: 2)	Reactive (Marks: 2)	Non-Reactive (Marks: 2)
	Participant's Answer	Negative ( Marks: 2)	Positive ( Marks: 2)	Negative ( Marks: 2)

Marks Obtained :- 12

Grand Total Marks : 80  
Marks Obtained: 80

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PT Technical Manager - EQAS

### Result ( Code No: DLH252 / Bansal Hospital, Bhopal )

Batch Name	23rd QC, March	Batch Marks	80
Start By Date	10-Jun-2020	Submit By Date	18-Jul-2020

#### Q1. Smear :

**1.1 : Pus Sample: A 32 year old female patient presented with pus discharge from one of the stitch sites. Smear prepared from the aspirated pus is provided to you. Perform Gram stain & report as below. (Marks: 5)**

**Expected Result (Cells):**—Moderate number of PMN cells seen. (Marks :1)

**Participant's Answer (Cells):**—Moderate number of polymorphonuclear cells and moderate number of squamous epithelial cells. (Marks :1)

**Expected Result (Organism):**—Many GNB seen. (Marks :3)

**Participant's Answer (Organism):**—Plenty of gram negative bacilli seen. (Marks :3)

**Expected Result (Interpretation):**—Wound infection by Gram negative bacilli. (Marks :1)

**Participant's Answer (Interpretation):**—Suggestive of surgical site infection due to gram negative bacilli. (Marks :1)

**Marks Obtained :- 5**

**1.2 : Urine Sample: A 45 year old female patient presented with fever with chills & dysuria of 3 days duration. Smear prepared from uncentrifuged urine sample is provided to you. Perform Gram stain & report as below. (Marks: 5)**

**Expected Result (Cells):**—Moderate number of PMN cells seen. (Marks :1)

**Participant's Answer (Cells):**—Many polymorphonuclear cells seen. (Marks :1)

**Expected Result (Organism):**—Many GNB (2) (>1 GNB/ OIF) seen (1). (Marks :3)

**Participant's Answer (Organism):**—Plenty of thick capsulated gram negative bacilli seen. (Marks :2)

**Expected Result (interpretation):**—Significant bacteriuria, suggestive of Urinary tract infection. (Marks :1)

**Participant's Answer (Interpretation):**—Suggestive of UTI due to Klebsiella group of organisms. (Marks :1)

**Marks Obtained :- 4**

**1.3 : Pleural fluid: A 68 year old male presented with fever, cough & shortness of breath for 5 days. Smear prepared from aspirated pleural fluid is provided to you. Perform Gram stain & report as below. (Marks: 5)**

**Expected Result (Cells):**—Moderate number of PMN cells seen. (Marks :1)

**Participant's Answer (Cells):**—Moderate number of polymorphonuclear cells and occasional epithelial cells seen. (Marks :1)

**Expected Result (Organism):**—Many GPCs (2) in pairs (1) resembling Streptococcus pneumoniae seen. (Marks :3)

**Participant's Answer (Organism):**—Plenty of gram positive, capsulated, lanceolate shaped diplococci along with occasional gram negative bacilli seen. (Marks :2)

**Expected Result (Interpretation):**—Pneumonia due to Streptococcus pneumoniae. (Marks :1)

**Participant's Answer (Interpretation):**—Suggestive of infection due to Streptococcus pneumoniae. (Marks :1)

**Marks Obtained :- 4**

#### Q2. Culture/Sensitivity :

**2.1 Three freeze dried (lyophilized) cultures of bacteria are provided. Identify and perform the antibiotic sensitivity testing. Use current CLSI guidelines wherever applicable for interpretation of antimicrobial sensitivity. EUCAST guideline can be used wherever CLSI guidelines are not**

Isolated From Blood: (Marks: 15)

Attempt only one: Either "A" or "M". Kindly do not report both, even if

Expected Result (Identification of given organism)		Genus		Species	
Participant's Answer		<i>Salmonella</i> (Marks: 3)		<i>Typhimurium</i> (Marks: 2)	
Participant's Answer		<i>Salmonella</i> (Marks: 3)		<i>Paratyphi B</i> (Marks: 0)	
Antibiotics	Ampicillin	Ceftriaxone	Ciprofloxacin	Meropenem	Co-trimoxazole
Expected Result	S(Marks: 2)	S(Marks: 2)	S(Marks: 2)	S(Marks: 2)	S(Marks: 2)
Participant's Answer	S (Marks: 2)	S (Marks: 2)	S (Marks: 2)	S (Marks: 2)	S (Marks: 2)
Participant's Test Method	Vitek -2	Vitek -2	Vitek -2	Vitek -2	Vitek -2
Correct:-- 2 Minor Error:-- 1 Major Error:-- 0 Very Major Error:-- (-1)					
Marks Obtained: 13					

2.2 Organism Isolated From Pus: (Marks: 15)

Expected Result (Identification of given organism)		Genus		Species	
Participant's Answer		<i>Staphylococcus</i> (Marks: 3)		<i>haemolyticus</i> (Marks: 2)	
Participant's Answer		<i>Staphylococcus</i> (Marks: 3)		<i>haemolyticus</i> (Marks: 2)	
Antibiotics	Penicillin	Vancomycin	Ciprofloxacin	Cefoxitin	Co-trimoxazole
Expected Result	R(Marks: 2)	S(Marks: 2)	R(Marks: 2)	R(Marks: 2)	S(Marks: 2)
Participant's Answer	R (Marks: 2)	S (Marks: 2)	R (Marks: 2)	R (Marks: 2)	S (Marks: 2)
Participant's Test Method	Vitek -2	Vitek -2	Vitek -2	Vitek -2	Vitek -2
Correct:-- 2 Minor Error:-- 1 Major Error:-- 0 Very Major Error:-- (-1)					
Participant's Comments: MR- CoNS (Methicillin resistant coagulase negative Staphylococci)					
Marks Obtained: 15					

2.3 Organism Isolated from Endotracheal aspirate: (Marks: 15)

Expected Result (Identification of given organism)		Genus		Species	
Participant's Answer		<i>Proteus</i> (Marks: 3)		<i>mirabilis</i> (Marks: 2)	
Participant's Answer		<i>Proteus</i> (Marks: 3)		<i>mirabilis</i> (Marks: 2)	
Antibiotics	Amikacin	Cefuroxime	Ceftriaxone	Imipenem	Co-trimoxazole
Expected Result	R(Marks: 2)	R(Marks: 2)	R(Marks: 2)	R(Marks: 2)	S(Marks: 2)
Participant's Answer	R (Marks: 2)	R (Marks: 2)	R (Marks: 2)	R (Marks: 2)	S (Marks: 2)
Participant's Test Method	Vitek -2	Vitek -2	Vitek -2	Vitek -2	Vitek -2
Correct:-- 2 Minor Error:-- 1 Major Error:-- 0 Very Major Error:-- (-1)					
Marks Obtained: 15					

Q 3. : Serology:

3.1 : Please carry out following serological tests on the given samples. (Marks: 8)

Q.No.	3.1.1	3.1.2
Test	CRP	Dengue IgM
Expected Result	Positive (Marks: 4)	Negative (Marks: 4)

Answer

Positive (Marks: 4)

Negative (Marks: 4)

Comments

Dengue IgM Kit name: Panbio diagnostics

Marks Obtained :- 8

Perform the Blood Borne Viral (BBV) serology: HBsAg, HCV and HIV antibody on both the samples (Sample nos. 3.2.1 & 3.2.2)  
(Marks: 12)

Sample		HIV Antibody	HBsAg	HCV Antibody
3.2.1	Expected Result	Non-Reactive (Marks: 2)	Non-Reactive (Marks: 2)	Reactive (Marks: 2)
	Participant's Answer	Non-Reactive ( Marks: 2)	Negative ( Marks: 2)	Reactive ( Marks: 2)
3.2.2	Expected Result	Non-Reactive (Marks: 2)	Non-Reactive (Marks: 2)	Non-Reactive (Marks: 2)
	Participant's Answer	Non-Reactive ( Marks: 2)	Negative ( Marks: 2)	Non-Reactive ( Marks: 2)

Marks Obtained :- 12

Grand Total Marks : 80  
Marks Obtained: 76

Note : This is computer generated report, does not require signature of the EQAS provider.

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# MICROBIOLOGY EXTERNAL QUALITY ASSURANCE SCHEME

Under the aegis of Indian Association of Medical Microbiology

## IAMM EQAS New Delhi

Department of Clinical Microbiology and Immunology  
Sir Ganga Ram Hospital, Rajinder Nagar, New Delhi-110060



Dr. Chand Watal  
Chairman - EQAS

Dr. Jaswinder K. Uberoi  
PT Coordinator - EQAS

Dr. Neeraj Uoel  
PT Coordinator - EQAS

Dr. Sanghamitra Datta  
PT Quality Manager - EQAS

Dr. Keena Kaveendran  
PT Technical Manager - EQAS

### Result ( Code No: DLH252 / Bansal Hospital, Bhopal )

Batch Name	22nd QC, November	Batch Marks	80
Start By Date	15-Nov-2019	Submit By Date	16-Dec-2019

#### Q.1. Smear :

1.1 : Stool Sample: A 48 year old female patient, HIV positive, presenting with complaints of abdominal pain & loose stool for 1 month. Smear prepared from stool sample is provided. Perform Kinyoun Stain & report as below. (Marks: 5 )

Expected Result (Findings):--Acid fast (2) Oocysts of Isospora seen (2). (Marks :4)

Participant's Answer (Findings):--Few, Cystoisospora belli oocysts with two sporocysts and Few Cystoisospora belli oocysts with granular zygote are seen. (Marks :2)

Expected Result (Interpretation):--Infection with Isosporiasis (1). (Marks :1)

Participant's Answer (Interpretation):--Diarrhoeal disease caused by Cystoisospora belli. (Marks :1)

Marks Obtained :- 3

1.2 : Blood Culture Broth: A 12 year old boy presenting with fever & vomiting for 3 days & altered sensorium for 1 day. The blood culture of the patient signaled positive after 14 hrs of incubation. The smear prepared from blood culture bottle is provided. Perform Gram stain & report as below. (Marks: 5 )

Expected Result (Findings):--Short gram positive bacilli (3). (Marks :3)

Participant's Answer (Findings):--Many, Non-spore-forming, Gram positive bacilli seen. (Marks :3)

Expected Result (Interpretation):--Possibility of Listeria infection (2). (Marks :2)

Participant's Answer (Interpretation):--Suggestive of Meningitis due to Listeria monocytogenes (Marks :2)

Marks Obtained :- 5

1.3 : Pus Sample: A 25 year old female patient presenting with swelling in the left axillary region. Smear prepared from aspirated pus is provided to you. Perform Gram stain & report as below. (Marks: 5 )

Expected Result (Cells):--Few (1) PMN cells & degenerated amorphous material seen(1). (Marks :2)

Participant's Answer (Cells):--Occasional Pus cells seen. (Marks :2)

Expected Result (Organism):--Many(1) GPCs in groups resembling Staphylococcus in morphology(1). (Marks :2)

Participant's Answer (Organism):--Gram positive cocci in singles, pairs and tetrads are seen. (Marks :1)

Expected Result (Interpretation):--Staphylococcus infection (1). (Marks :1)

Participant's Answer (Interpretation):-- (Marks :1)

Marks Obtained :- 4

#### Q.2. Culture/Sensitivity :

2.1 Three freeze dried (lyophilized) cultures of bacteria are provided. Identify and perform the antibiotic sensitivity testing. Use current CLSI guidelines wherever applicable for interpretation of antimicrobial sensitivity. EUCAST guideline can be used wherever CLSI guidelines are not available. A= Automated/M= Manual; tick whichever applicable. Attempt only one: Either "A" or "M". Kindly do not report both, even if done. Organism Isolated From Blood: (Marks: 15 )

	Genus	Species
Expected Result (Identification of given organism)	<i>Shigella</i> (Marks: 3)	<i>dysenteriae</i> (Marks: 2)

		Shigella (Marks: 3)		dysenteriae (Marks: 2)	
Participant's Answer	R (Marks: 2)	S (Marks: 2)	R (Marks: 2)	S (Marks: 2)	S (Marks: 2)
Participant's Test Method	Vitek -2	Vitek -2	Vitek -2	Vitek -2	Vitek -2
Correct: 2 Minor Error: 1 Major Error: 0 Very Major Error: (1)					
Participant's Comments: Catalase negative Shigella, ( Shigella dysenteriae type -1 Shigella shiga).					
Marks Obtained: 15					

## 2.2 Organism Isolated From Pus: (Marks: 15 )

		Genus	Species
Expected Result (Identification of given organism)		<i>Enterococcus</i> (Marks: 3)	<i>faecalis</i> (Marks: 2)
Participant's Answer		<i>Enterococcus</i> (Marks: 3)	<i>faecalis</i> (Marks: 2)

  

Antibiotics	Penicillin	Gentamicin High Level	Linezolid	Tetracycline	Vancomycin
Expected Result	S (Marks: 2)	S (Marks: 2)	S (Marks: 2)	S (Marks: 2)	S (Marks: 2)
Participant's Answer	S (Marks: 2)	S (Marks: 2)	S (Marks: 2)	S (Marks: 2)	S (Marks: 2)
Participant's Test Method	Vitek -2	Vitek -2	Vitek -2	Vitek -2	Vitek -2
Correct:-- 2 Minor Error:-- 1 Major Error:-- 0 Very Major Error:-- (-1)					
Marks Obtained: 15					

## 2.3 Organism Isolated from Endotracheal aspirate: (Marks: 15 )

		Genus	Species
Expected Result (Identification of given organism)		<i>Acinetobacter</i> (Marks: 3)	<i>baumannii complex</i> (Marks: 2)
Participant's Answer		<i>Acinetobacter</i> (Marks: 3)	<i>baumannii complex</i> (Marks: 2)

  

Antibiotics	Amikacin	Ciprofloxacin	Colistin	Meropenem	Piperacillin/Tazobactam
Expected Result	R (Marks: 2)	R (Marks: 2)	S (Marks: 2)	R (Marks: 2)	R (Marks: 2)
Participant's Answer	R (Marks: 2)	R (Marks: 2)	S (Marks: 2)	R (Marks: 2)	R (Marks: 2)
Participant's Test Method	Vitek -2	Vitek -2	Vitek -2	Vitek -2	Vitek -2
Correct:-- 2 Minor Error:-- 1 Major Error:-- 0 Very Major Error:-- (-1)					
Participant's Comments: Carbapenemase					
Marks Obtained: 15					

## Q 3.: Serology:

## 3.1 : Please carry out following serological tests on the given samples. (Marks: 8 )

Q.No.	3.1.1	3.1.2
Test	Typhidot (IgM)	CMV- IgG
Expected Result	Negative (Marks: 4)	Positive (Marks: 4)
Participant's Answer	Negative (Marks: 4)	Positive (Marks: 4)

Marks Obtained :- 8

## 3.2 : Perform the Blood Borne Viral (BBV) serology: HBsAg, HCV and HIV antibody on both the samples (Sample nos. 3.2.1 &amp; 3.2.2) (Marks: 12 )

		HIV Antibody	HBsAg	HCV Antibody
	Expected Result	Non-Reactive (Marks: 2)	Reactive (Marks: 2)	Non-Reactive (Marks: 2)
	Participant's Answer	Non-Reactive ( Marks: 2)	Reactive ( Marks: 2)	Non-Reactive ( Marks: 2)
3.2.2	Expected Result	Reactive (Marks: 2)	Non-Reactive (Marks: 2)	Non-Reactive (Marks: 2)
	Participant's Answer	Reactive ( Marks: 2)	Non-Reactive ( Marks: 2)	Non-Reactive ( Marks: 2)

Marks Obtained :- 17

**Grand Total Marks : 80**  
**Marks Obtained: 77**

**Note : This is computer generated report, does not require signature of the EQAS provider.**

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