

P 12 Clinical microbiology I

Task 1: Indications of microbiological examination

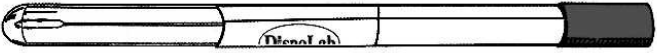

For following casuistics, fill in the table.

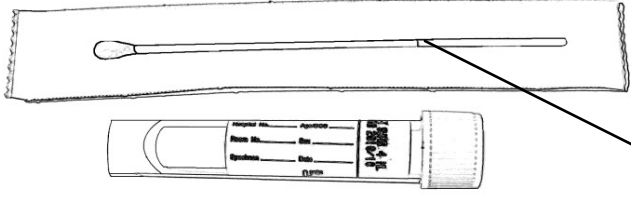
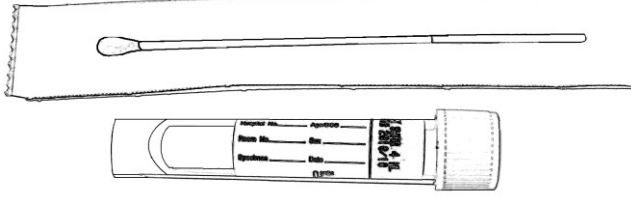
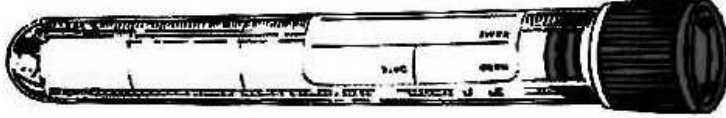
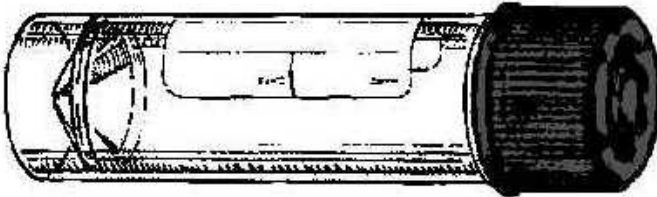
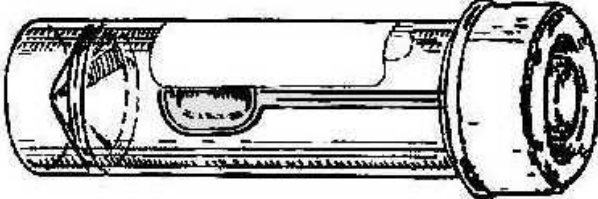
- ❶ Always fill in the case description (left collumn)
- ❷ Then try to find out your solution. Try to structure your answer followingly:
 Microbiological examination: yes/no
 - ❖ if yes, what type of a specimen(s)
 - ❖ if no, what more steps, e. g. direct treatment – what antibiotic, etc.)
- ❸ After the three minute limit, write down correction made according to teachers explanation.



	Description of a case	Your solution (⌚ 3 minutes)	Correction according to teacher explanation
a			
b			
c			

Task 2: Swabs and vessels

Observe the swabs on your table and fill in their „identity cards“.

Name: Plain swab		
	Stick may be made of	plastic, wood or aluminium
	Swab is made of	syntetic cotton
Practical use:		
Name: Amies swab		
	Stick is made of	plastic or aluminium
	Swab is made of	syntetic cotton
	Medium	Amies (Stuart, Cary Blair)
<i>Note: The medium may contain charcoal (then it is black); without charcoal, it would be colourless.</i>		
Practical use:		
variant with aluminium stick is used for		

Name: Fungi-Quick swab		
	Stick is made of	plastic
	Transport medium colour	colourless
	Cap colour	
Practical use:		
Name: C. A. T. swab		
	Stick is made of	plastic
	Transport medium colour	colourless
	Cap colour	
Practical use:		
Name: Common test tube for microbiology		
	Sterile? (yes or no)	
	Description	made of polystyrene, 16 × 100 mm, 10 ml
Practical use:		
Name: Sputum test tube		
	Sterile? (yes or no)	
	Description	made of polystyrene or polypropylene, 26 × 92 mm, 30 ml
Practical use:		
Name: Faeces container		
	Sterile? (yes or no)	
	Description	made of polypropylene, 26 × 82 mm, 30 ml
Practical use:		

Name:		Sampling vessel for urine	
		Sterile? (yes or no)	
		Description	made of polypropylene, 45 × 70 mm, 120 ml
Practical use:			

Task 3: Other sampling methods than swabs and vessels

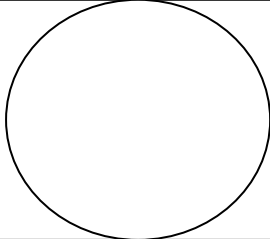
a) Moulage method

Perform the moulage method in pairs. Place a sterile filtration paper to your mate's forearm. Using forceps, transport it carefully to a Petri dish with agar. After 10 seconds, remove it and throw it away.

b) Smears

In some cases it is recommended to send directly microscopical smear to the laboratory (actinomycosis, gonorrhoea, but also other genital infections). In gynecologic problems, often two specimens of a vaginal smear is sent to the laboratory. After coming to the laboratory, one is stained using Giemsa staining and the other is stained using Gram staining.

Observe a result of a vaginal smear, and draw your result to the laboratory report. Write down, whether your slide was Gram or Giemsa stained.

	Gram–Giemsa stain

Task 4: Sampling in specific types of samples

a) Blood cultures

Describe use of three types of vessels for blood culture.

blue	
green	
red	

Fill in, what data should not be missing on a order form in case of blood culture sending (only „material type/examination type“ field)

Explain:

Why absolute sterility is necessary in blood culture samples more than in any other blood specimens (e. g. those sent for biochemical examination)?

How many blood cultures should be taken and why?

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Fill in the missing fields in description of process of blood culture examination according to videoclip and teacher explanation.

A blood culture vessel comes to the laboratory. Here it is put into a _____.

The positivity is demonstrated by _____ and _____. When the cultivation is positive, a smear is prepared and the sample is _____ to blood and Endo agar. Also a preliminary _____ test is performed directly from the specimen; as the inoculum is not standardized here, its results are only _____.

b) Urine

According to teacher explanation, tick, what sentences concerning urine sampling and transportation are true/false.

Urine examination is recommended in non-complicated and necessary in complicated cystitis <input type="checkbox"/> true <input type="checkbox"/> false
Microbiologists recommend use of cathetrized urine as a routine way of sampling urine for bacteriology <input type="checkbox"/> true <input type="checkbox"/> false
It is not important, whether prepucium (in men) or labia minora (in women) is in the way of urine stream when sampling urine for bacteriology <input type="checkbox"/> true <input type="checkbox"/> false
External orifice of urethra should be carefully washed and eventually also disinfected before taking sampling urine for bacteriology <input type="checkbox"/> true <input type="checkbox"/> false
The vessel, that the patient urinates in, should be sterile <input type="checkbox"/> true <input type="checkbox"/> false
The test tube used for urine transporation to the laboratory should have yellow cap <input type="checkbox"/> true <input type="checkbox"/> false
The order form should contain information whether urine is „routinely taken“, cathetrized, punctated, or whether it is a specimen taken from a permanent catheter <input type="checkbox"/> true <input type="checkbox"/> false
Urine from permanent catether has the same value for bacteriological diagnostics as cathetrized urine (just for examination) <input type="checkbox"/> true <input type="checkbox"/> false
Urine specimen should be delivered to the laboratory in 2 hours after sampling, in impossible, it should be kept in refrigerator <input type="checkbox"/> true <input type="checkbox"/> false
Urine sample is better than urethral swab in gonorrhoea diagnostics <input type="checkbox"/> true <input type="checkbox"/> false

c) Faeces samples for different types of pathogens and toxins

For some purposes, it is possible to send rectal swabs. For some other purposes, it is necessary to send a specimen of stool. Sometimes also at refrigerator temperature.

Fill in the next table.

Stool sent for	Type of specimen	Stool sent for	Type of specimen
bacteriology		virology – virus isolation	
mycology		parasitology	
virology – antigen detection		detection of toxin of <i>Clostridium difficile</i>	

Task 5: The order form

a) Order form filling in

Fill in the following order form with a patient name and data and requested examination related with the disease that is written on a card that was given to you by a teacher

Kód pojišťovny 111	požaduje díl A	IČP 602	Datum 14 03 10	Čís. dokladu	Pof. č.
POUKAZ NA VYŠETŘENÍ / OŠETŘENÍ				provedl díl B	
Pacient Albus DUMBLEDORE	Č. pojištěnce 22 11 22 112	Základní diagnóza Z 0 17	IČP	Odbornost	Pof. č.
Variabilní symbol	Ostatní diagnózy		Datum	Kód	Poč.
Odeslán ad:	Kód náhrady		1		
Požadováno:			2		
			3		
			4		
			5		
			6		
			7		
			8		
			9		
			10		
			11		
			12		
			13		
			14		
Poznámka:			Dne:		
razítko a podpis lékaře			razítko a podpis		

b) Order form common mistakes

To each of following order form, write down what is wrong. Some mistakes are mistakes of the order form, but you can also remark improperly requested examinations.
