

P 12 Clinical microbiology I

To study: Sampling, material transportation (from textbooks, WWW etc.)
 From spring term: Microscopy

Task 1: Indications of microbiological examination

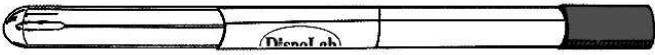
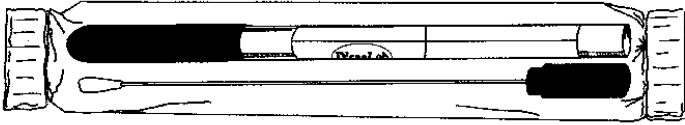
For following casuistics, fill in the table.

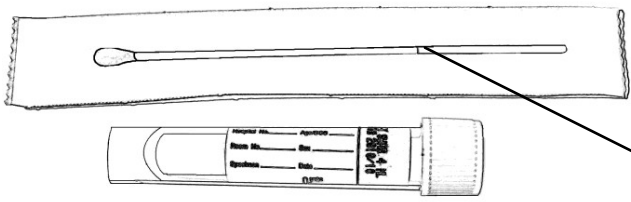
- ❶ Always fill in the case description (left collumn)
- ❷ Then try to find out your solution. Try to structure your answer followingly:
 Microbiological examination: yes/no
 - ❖ if yes, what type of a specimen(s)
 - ❖ if no, what more steps, e. g. direct treatment – what antibiotic, etc.)
- ❸ After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

	Description of a case	Your solution (⌚ 2 minutes)	Correction according to teacher explanation
a			
b			
c			
d			

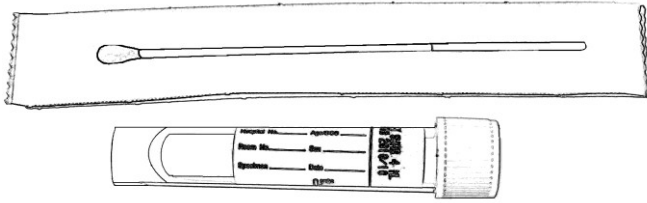
Task 2: Swabs and vessels

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

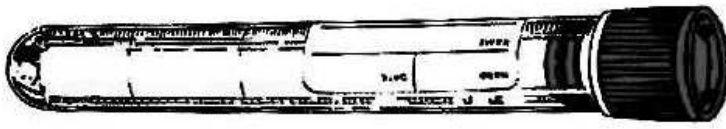
Name: Plain swab		
	Stick may be made of	plastic, wood or aluminium
	Swab is made of	syntetic cotton
Practical use:		
Name: Amies swab		
	Stick is made of	plastic or aluminium
	Swab is made of	syntetic cotton
	Medium	Amies (Stuart, Cary Blair)
<i>Note: The medium may contain charcoal (then it is black); 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	

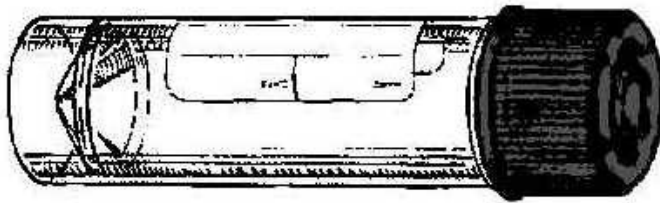
Practical use:

Name: C. A. T. swab		
	Stick is made of	plastic
	Transport medium colour	colourless
	Cap colour	

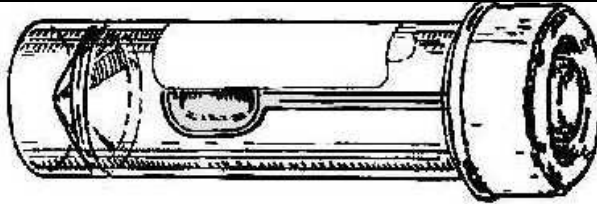
Practical use:

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

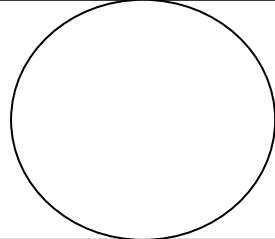
a) Moulage method

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?

--

Topic P12

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 prepuccium (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. Do not rewrite the story from your card; try to write the request in a form that would be probably used by a real doctor.

Kód pojistovny 111	požaduje díl A	IČP Odbornost	Datum	Čís. dokladu	Pof. č.
POUKAZ NA VYŠETŘENÍ / OŠETŘENÍ					
Pacient	Č. pojistěnce	Základní diagnóza	IČP		
Variabilní symbol	Ostatní diagnózy	Odbornost			
Odeslán ad:	Kód náhrady	Var. symbol			
Požadováno:	Datum		Kód	Poč.	
Poznámka:	1		2		
	3		4		
	5		6		
	7		8		
	9		10		
	11		12		
	13		14		
	15		16		
	17		18		
	19		20		
	21		22		
	23		24		
	25		26		
	27		28		
29		30			
31		32			
33		34			
35		36			
37		38			
39		39			
40		40			
41		41			
42		42			
43		43			
44		44			
45		45			
46		46			
47		47			
48		48			
49		49			
50		50			
51		51			
52		52			
53		53			
54		54			
55		55			
56		56			
57		57			
58		58			
59		59			
60		60			
61		61			
62		62			
63		63			
64		64			
65		65			
66		66			
67		67			
68		68			
69		69			
70		70			
71		71			
72		72			
73		73			
74		74			
75		75			
76		76			
77		77			
78		78			
79		79			
80		80			
81		81			
82		82			
83		83			
84		84			
85		85			
86		86			
87		87			
88		88			
89		89			
90		90			
91		91			
92		92			
93		93			
94		94			
95		95			
96		96			
97		97			
98		98			
99		99			
100		100			
101		101			
102		102			
103		103			
104		104			
105		105			
106		106			
107		107			
108		108			
109		109			
110		110			
111		111			
112		112			
113		113			
114		114			
115		115			
116		116			
117		117			
118		118			
119		119			
120		120			
121		121			
122		122			
123		123			
124		124			
125		125			
126		126			
127		127			
128		128			
129		129			
130		130			
131		131			
132		132			
133		133			
134		134			
135		135			
136		136			
137		137			
138		138			
139		139			
140		140			
141		141			
142		142			
143		143			
144		144			
145		145			
146		146			
147		147			
148		148			
149		149			
150		150			
151		151			
152		152			
153		153			
154		154			
155		155			
156		156			
157		157			
158		158			
159		159			
160		160			
161		161			
162		162			
163		163			
164		164			
165		165			
166		166			
167		167			
168		168			
169		169			
170		170			
171		171			
172		172			
173		173			
174		174			
175		175			
176		176			
177		177			
178		178			
179		179			
180		180			
181		181			
182		182			
183		183			
184		184			
185		185			
186		186			
187		187			
188		188			
189		189			
190		190			
191		191			
192		192			
193		193			
194		194			
195		195			
196		196			
197		197			
198		198			
199		199			
200		200			
201		201			
202		202			
203		203			
204		204			
205		205			
206		206			
207		207			
208		208			
209		209			
210		210			
211		211			
212		212			
213		213			
214		214			
215		215			
216		216			
217		217			
218		218			
219		219			
220		220			
221		221			
222		222			
223		223			
224		224			
225		225			
226		226			
227		227			
228		228			
229		229			
230		230			
231		231			
232		232			
233		233			
234		234			
235		235			
236		236			
237		237			
238		238			
239		239			
240		240			
241		241			
242		242			
243		243			
244		244			
245		245			
246		246			
247		247			
248		248			
249		249			
250		250			
251		251			
252		252			
253		253			
254		254			
255		255			
256		256			
257		257			
258		258			
259		259			
260		260			
261		261			
262		262			
263		263			
264		264			
265		265			
266		266			
267		267			
268		268			
269		269			
270		270			
271		271			
272		272			
273		273			
274		274			
275		275			
276		276			
277		277			
278		278			
279		279			
280		280			
281		281			
282		282			
283		283			
284		284			
285		285			
286		286			
287		287			
288		288			
289		289			
290		290			
291		291			
292		292			
293		293			
294		294			
295		295			
296		296			
297		297			
298		298			
299		299			
300		300			
301		301			
302		302			
303		303			
304		304			
305		305			
306		306			
307		307			
308		308			
309		309			
310		310			
311		311			
312		312			
313		313			
314		314			
315		315			
316		316			
317		317			
318		318			
319		319			
320		320			
321		321			
322		322			
323		323			
324		324			
325		325			
326		326			
327		327			
328		328			
329		329			
330		330			
331		331			
332		332			
333		333			
334		334			
335		335			
336		336			
337		337			
338		338			
339		339			
340		340			
341		341			
342		342			
343		343			
344		344			
345		345			
346		346			
347		347			
348		348			
349		349			
350		350			
351		351			
352		352			
353		353			
354		354			
355		355			
356		356			
357		357			
358		358			
359		359			
360		360			
361		361			
362		362			
363		363			
364		364			
365		365			
366		366			
367		367			
368		368			
369		369			
370		370			
371		371			
372		372			
373		373			
374		374			
375		375			
376		376			
377		377			
378		378			
379		379			
380		380			
381		381			
382		382			
383		383			
384		384			
385		385			
386		386			
387		387			
388		388			
389		389			
390		390			
391		391			
392		392			
393		393			
394		394			
395		395			
396		396			
397		397			
398		398			
399		399			
400		400			

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.