



BMED 2404- PRACTICE QUESTIONS



Authors' note

We are three members of the Medical Science class 2017 that just like you were overwhelmed by the amount of content and information which seemed at first almost indigestible. The three of us have collaborated during the semester to find a way to break it down and create this document. The idea was to create questions for each other to help us revise and practice for the final exam. By the end of the semester we realized we had a powerful tool and we believe that our questions can live on to help the future generations of Medical Science students.

We look back on the hours spent creating these questions for each other with pride and reflect on the great memories sewn into our hard work. We hope this can enhance your learning experience.

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As we mentioned before, we have put many hours and hard work into this work. Your support of the authors' right is appreciated.

Best of luck for the exams!

Table of content BMED 2404

Lectures

Multiple choice questions

<u>Introduction to medical microbiology questions</u>	5
<u>Introduction to medical microbiology answers</u>	85
<u>Transmission of microbial disease questions</u>	6
<u>Transmission of microbial disease answers</u>	86
<u>Pathogenicity and Virulence Factors questions</u>	8
<u>Pathogenicity and Virulence Factors answers</u>	87
<u>Barriers to microbial Infection questions</u>	9
<u>Barriers to microbial Infection answers</u>	88
<u>Inflammation questions</u>	11
<u>Inflammation answers</u>	90
<u>Inflammation 2 questions</u>	13
<u>Inflammation 2 answers</u>	92
<u>Neutrophils, Macrophages, Endothelium and Chemotactic Mediators questions</u>	16
<u>Neutrophils, Macrophages, Endothelium and Chemotactic Mediators answers</u>	93
<u>Wound healing process questions</u>	18
<u>Wound healing process answers</u>	94
<u>Medically important bacteria part 1 Gram -ve questions</u>	19
<u>Medically important bacteria part 1 Gram -ve answers</u>	95
<u>Medically important bacteria part 2 Gram +ve questions</u>	21
<u>Medically important bacteria part 2 Gram +ve answers</u>	96
<u>Laboratory Identification of Pathogens questions</u>	22
<u>Laboratory Identification of Pathogens answers</u>	97
<u>Introduction to the adaptive immune system questions</u>	24
<u>Introduction to the adaptive immune system answers</u>	98
<u>Antigen detection, processing and presentation questions</u>	27
<u>Antigen detection, processing and presentation answers</u>	101
<u>Introduction to the adaptive immune system 2 questions</u>	30
<u>Introduction to the adaptive immune system 2 answers</u>	105
<u>T lymphocyte activation and cell mediated responses questions</u>	33
<u>T lymphocyte activation and cell mediated responses answers</u>	109
<u>Eradicating intracellular microbes questions</u>	36
<u>Eradicating intracellular microbes answers</u>	112
<u>B-cells questions</u>	39
<u>B-cells answers</u>	116
<u>Eradicating extracellular pathogens questions</u>	44
<u>Eradicating extracellular pathogens answers</u>	121
<u>Virus replication strategies questions</u>	48

Virus replication strategies answers	124
Pathogenesis of bacteria case study questions	51
Pathogenesis of bacteria case study answers	127
Short answer questions	52
Answers for short answer questions	128

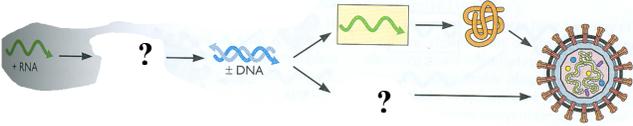
Practicals

[Multiple choice questions](#)

Medically important bacteria questions	54
Medically important bacteria answers	132
Normal flora questions	59
Normal flora answers	135
Transmission of disease questions	60
Transmission of disease answers	136
Host defences questions	60
Host defences answers	136
Laboratory diagnosis of infection questions	61
Laboratory diagnosis of infection answers	137
Chronic inflammation questions	63
Chronic inflammation answers	138
Macroscopic visualisation of antigen-antibody interactions questions	66
Macroscopic visualisation of antigen-antibody interactions answers	141
Microscopic visualisation of antigen-antibody interactions questions	71
Microscopic visualisation of antigen-antibody interactions answers	144
Modern methods of virus identification: molecular techniques questions	74
Modern methods of virus identification: molecular techniques answers	146
Monoclonal antibodies in research and clinic questions	79
Monoclonal antibodies in research and clinic answers	150
Modern methods of virus identification serology questions	82
Modern methods of virus identification serology answers	153

BMED 2404- Multiple Choice Questions

Lectures

No.	Lecture/ Prac	Question	options
1	<i>Transmission of microbial disease</i>	What are the limitations of Koch's postulates?	<p>A The postulate cannot be made on resistant individuals.</p> <p>B The postulate requires pathogen cultivation.</p> <p>C The postulate cannot identify single colonies of pathogens.</p> <p>D The postulate cannot obtain 'live' infectious agents.</p> <p>E None of the above.</p>
2	<i>Virus replication strategies</i>	<p>For ss(+ve)RNA retroviruses:</p>  <p>Can you determine what are the molecules missing in the diagram?</p>	<p>A -ve ssDNA, +ve ssRNA</p> <p>B +ve ssDNA, +ve ssRNA</p> <p>C -ve ssDNA, -ve ssRNA</p> <p>D -ve ssRNA, +ve ssDNA</p> <p>E +ve ssRNA, -ve ssDNA</p>

[Answers](#)

BMED 2404- Short Answer Questions

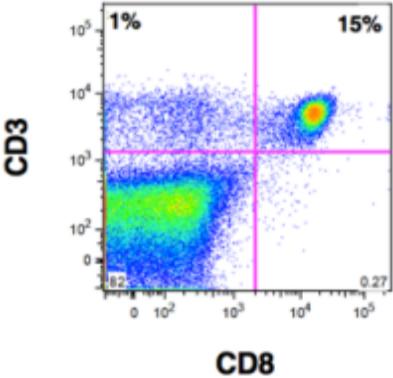
Lectures

No.	Lecture	Question
1	<i>Introduction to the adaptive immune system</i>	<p>Draw an antibody and label:</p> <ul style="list-style-type: none"> • Variable domains • Constant domains • Light and heavy chains • Antibody hinges

[Answers](#)

BMED 2404- Multiple Choice Questions

Practicals

No.	Lecture/ Prac	Question	options
1	Medically important bacteria	Why do samples taken from the throat tend to be more heterogeneous than samples from skin/nose which are said to be more homogenous?	<p>A Sloughing of the skin means only heterogeneous organisms with specific traits can live there</p> <p>B Salty conditions in the throat means only homogenous organisms with specific traits can live there</p> <p>C Moist conditions on the skin means only homogenous organisms with specific traits can live there</p> <p>D Anaerobic/aerobic conditions found in the throat means heterogeneous organisms with different traits can live there</p> <p>E Antibacterial secreted from hair follicles produces a condition in the throat which creates selection pressures for microbes that means heterozygous organisms with different traits can live there</p>
2	Monoclonal Antibodies in research and the clinic	 <p>Based on the flow cytometry dot plot above, what is the most appropriate description of the cells shown in the upper right quadrant?</p>	<p>A T helper cells</p> <p>B Cytotoxic T cells</p> <p>C Plasma B cells</p> <p>D Red blood cells</p> <p>E None of the above</p>

Answers

BMED 2404- ANSWERS for Multiple Choice Questions

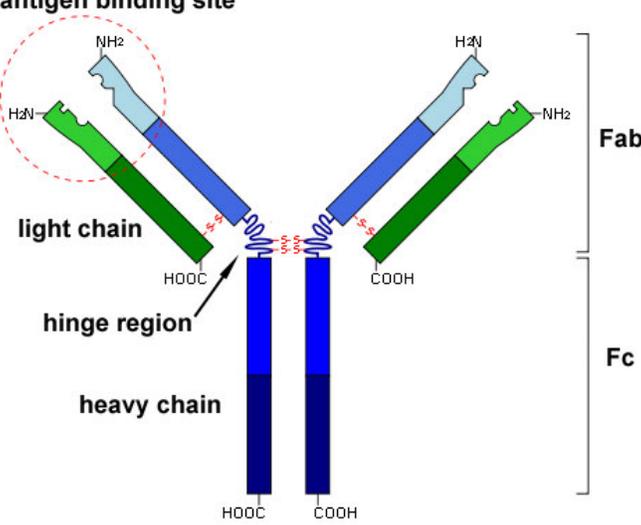
Lectures

No.	Lecture/Prac	Correct Answer	Explanation
1	<i>Transmission of microbial disease</i>	B	Virally transmitted diseases are intracellular, and viruses requires a host to replicate. This means that it would be impossible to culture viruses from an infected individual to carry out the affirmation tests in Koch's postulates.
2	<i>Virus replication strategies</i>	A	Remember that transcription and reverse transcription make complementary strands in the opposite direction and the original nucleic acid must be packaged.

[Back](#)

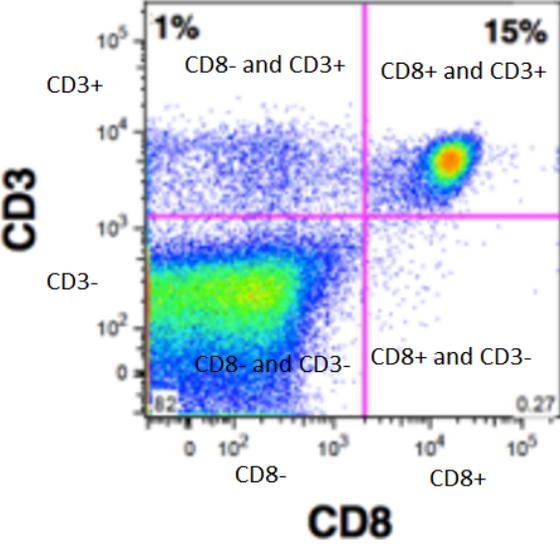
BMED 2404- ANSWERS for Short Answer Questions

Lectures

No.	Lecture/Prac	Answer
1	<i>Introduction to the adaptive immune system</i>	<p>Immunoglobulin (Ig, antibody)</p>  <p>Enzyme (papain) digestion forms 3 fragments: 2 Fab and 1 Fc</p>

[Back](#)

BMED 2404- ANSWERS for Multiple Choice Questions
Practicals

No.	Lecture /Prac	Correct Answer	Explanation
1	Medically important bacteria	D	<p>The skin is a very harsh environment to live on. This is why microbes need a very specific set of traits to live there. Think about convergence evolution, how different species of animals develop very similar traits because they live in the same environmental pressures. Microbes of the skin are like that, so they tend to be highly homogenous. You only really find <i>staphylococcus sp.</i> and <i>micrococcus sp.</i> on the skin.</p> <p>The throat however has many different environments within it. It is also very moist and contains a lot of nutrients (you eat through your mouth mate). This means a wide variety of microbial species can co-exist in the throat, and they're not all restricted to desiccation resistant gram +ve bacteria.</p> <p>This is why B and E are incorrect. These environments do not exist in the throat. A is incorrect because this sort of environment would favour a homogenous population of microbes that have traits that are specific to that region. C is incorrect because skin is not moist.</p>
2	Monoclonal Antibodies in research and the clinic	B	<p>To read a flow cytometry dot plot the grid is divided into four quadrants to show whether the cells found have or do not have a certain component. This is usually things like CD3, CD8, CD4 etc. The quadrants are used as shown below: Next you need to know what cells have what component. In this</p>  <p>case we are looking at the top right and need to know what cell has a CD8 and a CD3. CD3 just shows that it's a lymphocyte but having a CD8 shows it's a cytotoxic T cell.</p>