

COMMONWEALTH OF AUSTRALIA

Copyright Regulations 1969

Warning

This material has been reproduced and communicated to you by or on behalf of *The Charles Darwin University* pursuant to Part VB of the *Copyright Act 1968* (the Act). The material in this communication may be subject to copyright under the Act. Any further reproduction or communication of this material by you may be the subject of copyright protection under the Act.

Do not remove this notice



Family Name	
Given Names	
Student Number	
Teaching Period	Semester 1, 2016

FINAL EXAMINATION	DURATION				
SBI283 – Immunology	<table border="1"> <tr> <td>Reading Time:</td> <td>10 minutes</td> </tr> <tr> <td>Writing Time:</td> <td>120 minutes</td> </tr> </table>	Reading Time:	10 minutes	Writing Time:	120 minutes
Reading Time:	10 minutes				
Writing Time:	120 minutes				

INSTRUCTIONS TO CANDIDATES

EXAM CONDITIONS

You may begin writing from the commencement of the examination session. The reading time indicated above is provided as a guide only.

- This is a CLOSED BOOK examination
- No calculators are permitted
- No handwritten notes are permitted
- No dictionaries are permitted

ADDITIONAL AUTHORISED MATERIALS	EXAMINATION MATERIALS TO BE SUPPLIED
No additional printed material is permitted	1 x 20 Page Book

THIS EXAMINATION PAPER AND SUPPLIED MATERIALS ARE NOT PERMITTED TO BE REMOVED FROM ANY EXAMINATION VENUE IN ANY CIRCUMSTANCE. THIS EXAMINATION IS PRINTED DOUBLE-SIDED.

**THIS EXAMINATION IS PRINTED
DOUBLE-SIDED.**

**THIS PAGE HAS BEEN INTENTIONALLY LEFT
BLANK.**

Section A

Fill in the blanks

Total No of Marks for this section: 40 marks (converted into 20 marks)

This section should be answered on the Answer Booklet provided. Please ensure that your name and student number have been written on the answer Booklet.

Marks for each question are indicated.

Question 1

Activation of naïve cells lead to the generation of _____ and _____ cells.

(Marks: 2)

Question 2

In the absence of a co-stimulatory signal (Signal 2), T cell receptor engagement results in _____ and _____.

(Marks: 2)

Question 3

For most research, diagnostic or therapeutic purposes, _____ antibodies derived from a single clone and thus specific for single epitope are preferable.

(Mark: 1)

Question 4

Three major types of vaccines are _____,
_____ and _____

(Marks: 3)

Question 5

Class I cytokine receptor family have _____ conserved
_____ amino acid sequences.

(Mark: 2)

Question 6

Macrophages must be activated before they express _____ molecules and
_____ molecules.

(Marks: 2)

Question 7

During development, the majority of double negative thymocytes develop into _____ cells, or _____ cells.

(Marks: 2)

Question 8

T cells express membrane molecules including _____, _____, _____, _____ and _____ that play accessory roles in T cell function or signal transduction

(Marks: 5)

Question 9

Antigen binding is accomplished by _____ region and effector functions by _____ regions.

(Marks: 2)

Question 10

Antibody molecules have two roles _____ and _____

(Marks: 2)

Question 11

Class I molecules are expressed on most _____ cells; Class II molecules are restricted to _____, _____ and _____ cells.

(Marks: 4)

Question 12

IgE binds to _____ and _____.

(Marks: 2)

Question 13

The family disorder termed SCID stems from defects in lymphoid development that affects _____ cells, either alone or in combination with _____ cells and _____ cells.

(Marks: 3)

Question 14

The transporter protein is membrane spanning heterodimer consisting of two proteins _____ and _____ each have domain projecting into the lumen of _____ and _____ domain that projects into the cytosol.

(Marks: 4)

Question 15

_____ stimulates and _____ inhibits T-cell activation when engaged by _____ or an antigen presenting cells.

(Marks: 3)

Question 16

IgM structure with _____ binding sites has higher valency than other types

(Marks: 1)

Section B

Short Answer Questions

Total No of Marks for this section: 30

This section should be answered in the Answer Booklet provided.

Marks for each question are indicated.

Question 1

Explain the difference between Natural Killer cells and Mononuclear phagocytes

(Marks: 2)

Question 2

Explain briefly about MHC restriction

(Marks: 2)

Question 3

What are the advantages and disadvantages of using live attenuated organisms as vaccines?

(Marks: 2)

Question 4

Briefly outline the type of rejections?

(Marks: 2)

Question 5

The cytokine IL-2 is capable of activating all T cells to proliferation and differentiation. How the immune system does ensure that only T cells that have been stimulated by antigen are susceptible to IL-2 signalling?

(Marks: 2)

Question 6

Briefly discuss the non-specific and specific host defence mechanism?

(Marks: 2)

Question 7

List four types of antigen delivery strategies

(Marks: 2)

Question 8

Explain briefly about the protein families of cytokines and their receptors

(Marks: 2)

Question 9

Explain briefly about the Antibody mediated effector functions

(Marks: 2)

Question 10

Briefly describe the four major categories of pathogen. Which are likely to be the most homogenous in form and which the most diverse? Why?

(Marks: 2)

Question 11

Define the following terms and give examples using the human HLA locus: polygeny, polymorphism, and codominant expression. How exactly does each contribute to ensuring that a diversity of antigens can be presented by each individual?

(Marks: 2)

Question 12

Monoclonal antibodies have been administered for therapy in various autoimmune animal models. Which monoclonal antibodies have been used, what is the rationale for these approaches?

(Marks: 2)

Question 13

List the four characteristic attributes of adoptive immunity which are mediated by lymphocytes
(Marks: 2)

Question 14

List out the properties of immunogen contribute to immunogenicity?

(Marks: 2)

Question 15

Briefly discuss the non-specific and specific host defence mechanism?

(Marks: 2)