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National University of Ireland, Galway
Ollscoil na hÉireann, Gaillimh

Spring Examinations 2007/2008

Exam Code(s)	3BY1, 3BY2
Exam(s)	B.Sc. Degree (Biotechnology)
Module Code(s)	MI312
Module(s)	Microbiology
Paper No.	1
Repeat Paper	
External Examiner(s)	Professor G McMullan
Internal Examiner(s)	Professor P Smith
	Dr. T Barry
	Dr. M Tuohy

Instructions: **Answer 5 Questions**

Please indicate clearly the numbers of the questions answered on the first page of your Answer Book

Duration	3 hrs
No. of Pages	1
Department(s)	Microbiology
Course Co-ordinator(s)	Dr. Maria Tuohy (Ext. 3439)

Q1. Write an essay entitled “Cell-mediated immunity – importance and functions”.

Q2. Write an essay entitled “Hypersensitivity – adverse effects of the immune system”.

Q3. What are the characteristics of an ideal indicator microorganism for detection of sewage pollution in potable water? Comment on how *Escherichia coli* meet these requirements and what other microorganisms might be considered as indicators of pollution?

Q4. Write an essay on “Viruses and Human Cancer”.

Q5. Compare and contrast a typical food infection with a typical food intoxication.

Q6. *Clostridium botulinum* can cause lethal food intoxications in humans. Discuss this statement with reference to the mode of action of the botulinum toxin.

Q7. Write an essay on “Media for Industrial Fermentations”.

Q8. Write an essay on “Practical approaches to the sterilisation of large volumes of thermolabile liquids”.

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Autumn Examinations 2007/2008

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Exam(s)	**B.Sc. Degree (Biotechnology)**
Module Code(s)	**MI312**
Module(s)	**Microbiology**
Paper No.	**1**
Repeat Paper	
External Examiner(s)	**Professor G. McMullan**
Internal Examiner(s)	**Professor P. Smith**
	Dr. T. Barry
	Dr. M. Tuohy

Instructions: **Answer 5 Questions**

Please indicate clearly the numbers of the questions answered on the first page of your Answer Book

Duration	**3 Hours**
No. of Pages	**Cover Page + 1**
Department(s)	**Microbiology**
Course Co-ordinator(s)	**Dr. Maria Tuohy (Ext. 3439)**

Q1. Describe the key characteristics of monoclonal antibodies (hybridomas) and give a brief outline of how they are produced in the laboratory.

Q2. Write brief descriptive notes on **two** of the following:

(a) The conditions influencing antibody test reactions
(b) Complement fixation tests
(c) Radioimmunoassay

Q3. Write a short essay entitled "The microbiology of beer production".

Q4. With reference to their role as agents of food-borne disease write short notes on **two** of the following:

(a) Campylobacter jejuni
(b) Listeria monocytogenes
(c) Bacillus cereus

Q5. Describe those mechanisms by which an animal cell can acquire an active oncogene that involves infection by a virus.

Q6. What are the characteristics of an ideal indicator microorganism for detection of sewage pollution in potable water? Comment on how *Escherichia coli* meet these requirements and what other microorganisms might be considered as indicators of pollution

Q7. Write an essay entitled "Organisms for bioprocesses, their characteristics,selection and preservation".

Q8. Write an essay entitled "Sterilisation by filtration".