

MANSOURA UNIVERSITY

FACULTY OF VETERINARY MEDICINE

DEPT. BACTERIOLOGY, MYCOLOGY AND IMMUNOLOGY



EXAMINATION

IN

GENERAL BACTERIOLOGY, IMMUNOLOGY AND MYCOLOGY

Failure Students, 1st Semester (2014/2015)

Exam. Date: 12/23/2014	Total Score: 25 marks
Answer the following questions	Time: 2 hours

- 1) In front of you, a table shows results of intraperitoneal inoculation of an enriched broth suspension of pathogenic bacterium incubated at 37°C for 24 hours and containing 3×10^5 CFU/ml in mice. (18 marks)

Tested mice	Inoculated Dose							
	0.5 ml	1 ml	1.5 ml	2 ml	2.5 ml	3 ml	3.5 ml	4 ml
Inoculated number	10	10	10	10	10	10	10	10
Dead Number (within 72 hours)	2	3	5	7	8	10	10	10
Percentage of death	20 %	30 %	50 %	70 %	80 %	100 %	100 %	100 %

- 1- Define and determine MLD, LD50 and LD100. (1.5 marks)
- 2- Which is the best one, why? (1 mark)
- 3- Calculate the number of inoculated organisms per each dose? (1 mark)
- 4- Why is the inoculated bacterium in mice a virulent one and what are the components of bacterial virulence? (2 marks)
- 5- Write all what you know on attenuation and exaltation of bacterial virulence and their importance. (2 marks)
- 6- The inoculated organism may be in S or R phase, what will be happen if it is inoculated in R phase to mice, why? (1 mark)

- 7- Which type of mutation the change from S phase to R phase, why? (1 mark)
- 8- The inoculated broth in mice contains (bacterial cells alone, bacterial exotoxins alone, both bacterial cells and bacterial exotoxins), why? (1 mark)
- 9- Why the inoculated exotoxins in a host regarded as antigens and what are the requirements of antigenicity? (2.5 marks)
- 10- Suppose, this pathogenic bacterium contains 24 epitopes. 7 of them are hidden and from the others 4 epitopes are identical to each other, 3 another epitopes are identical to each other, 2 another epitopes are also identical to each other and the remains are not identical. Calculate its valence, why? (2 marks)
- 11- What are the immune-products resulting from parental injection of exotoxins in a host? What is the significance of these products? (1 mark)
- 12- Tabulate all what you know on different types of antibodies. (2 marks)

2) **Discuss:**

(3 marks)

- 1- Structure of mould colony.
- 2- Asexual reproduction of fungi.

3) **Tabulate the microscopic differences between (choose 2 from them):**

(4 marks)

- 1- Trichophyton species and Microsporum species.
- 2- Mucor species and Rhizopus species.
- 3- Aspergillus species and Penicillium species.
- 4- *Cryptococcus neoformans* and *Candida albicans*.

GOOD LUCK

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