



UNIVERSITY OF RUHUNA – FACULTY OF MEDICINE

ALLIED HEALTH SCIENCES DEGREE PROGRAMME

FOURTH BPHARM PART I EXAMINATION – JUNE 2015

PH 4141: CELL BIOLOGY AND IMMUNOLOGY (SEQ)

TIME: ONE HOUR AND 30 MINUTES

INSTRUCTIONS

- Answer all questions.
- No paper should be removed from the examination hall.
- Do not use any correction fluid.
- Use illustrations where necessary.

1.

1.1 Name **three** types of cell culture media used to culture human cell lines. **(10 marks)**

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1.2 Compare the differences between primary and continuous cell culture **(10 marks)**

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1.3 List the steps in cell passaging. **(10 marks)**

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1.4 Name a human cell line to research on breast carcinoma. **(05 marks)**

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1.5 Why do you need liquid nitrogen in cell culture laboratory? **(10 marks)**

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1.6 State the use of a water bath in a cell biology laboratory. **(15 marks)**

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1.7 List the clinical uses/applications of cell cultures. **(20 marks)**

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1.8 Mention the difference between primary and continuous cell line. **(20 marks)**

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2.1 List the steps in cell freezing. **(20 marks)**

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2.2 What is the use of trypsin in human cell cultures? **(10 marks)**

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2.3 List the steps in conducting a primary cell culture. **(20 marks)**

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2.4 State the difference between cell clone and a cell line. **(10 marks)**

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2.5 State the difference between adherent cells and suspension cells. **(10 marks)**

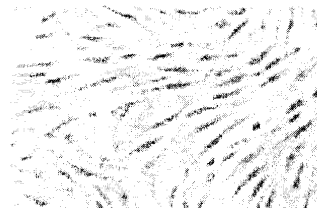
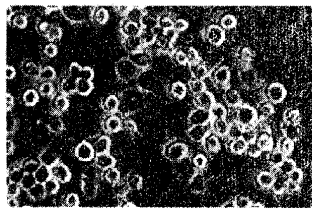
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2.6 Fume hood is not a biological safety cabinet. Mention the reasons for this statement.

(10 marks)

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2.7 Human cell lines can be identified on the basis of the morphology. Following are the pictures of the two major types of cell lines. Name the two types. *(20 marks)*



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3.1 Define cytokine.

(10 marks)

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3.2 List the functional properties of cytokine.

(10 marks)

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3.3. Explain the following statements.

3.3.1 Cytokines shows redundancy in the actions.

(20 marks)

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3.3.2 Cytokines are pleiotropic in some actions.

(20 marks)

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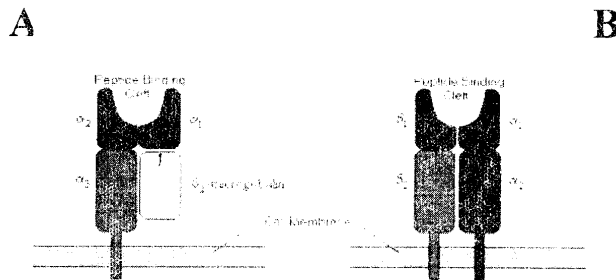
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3.4 Name the two different molecules seen in the picture.

(20 marks)



A

B

3.5 Describe the functions of CD8 T cells

(20 marks)

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4.

4.1 State the main function of following organelles. **(10 marks)**

4.1.1 Mitochondria

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4.1.2 Peroxisome

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4.2 “Lysosomes are recycling centres of the cell.” Justify the above statement. **(25 marks)**

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4.3 Describe briefly the structure of a Nucleosome. **(25 marks)**

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4.4 Draw and label the complete structure of a proteasome. *(15 marks)*

4.5 Describe briefly the role of proteasome in the generation of immune reactions. *(25 marks)*

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