Name: **Roll No.**

LS4104: Cell fractionation practical: 2018

Answer to all the questions: Total marks 16

1. Briefly explain Fumarage reaction with diagram (3)

2. What is the role of PMSF during chloroplast isolation? (2)

3. After chloroplast isolation, how will you validate your result? (3)

4. What are the basic steps of isolation of mitochondria from chicken liver? How will you further isolate mitochondrial DNA and membrane from it (provide concepts)? (2+2)

5. Chloroplast ribosome is a 70S ribosome. What do you understand by the letter "S"? Explain its implications? (2+2)

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1.Disaggregating of cells can be achieved by

a.Physical disruption b. Enzymatic digestion c. Treating with chelating agents d. All of the above

2. -------- protects the working environment from dust and other airborn contaminants by maintaining a constant, unidirectional flow of HEPA-filtered air over the work area

a. Air purifier b. Air conditioner c. Air curtain d. Cell culture hood

3. The optimal temperature for cell culture largely depends on the --------

A. Body temperature of the host from which the cells were isolated
b. Temperature range of the incubator
c. Temperature of the cells
d. Temperature of the surrounding environment

4. If 10 ul from 2 ml of cell suspension loaded onto the hemocytometer gave a cell count of 100 from the 4 quadrants, then the total cell number is,

a. $5x10^4$ b. $2.5x10^4$ c. $2.5x10^5$ d. $5x10^5$

5. BSL-4 is appropriate for exotic agents, like *E.coli*, that pose a high individual risk of life-threatening disease by infectious aerosols and for which no treatment is available

True or False

6. Of all the contaminations possible below, the easiest one to detect would be,

a. Fungi and yeast b. Chemical contamination c. Cross-contamination d.Mycoplasma

7. Confluency refers to

a. The area that each cell occupies

b. The area that all the cells together occupy

c. The ratio of area occupied by the cells and the total area available

d. Viable cells per ml.

Roll No:

Name:

(LS4104) Please be brief with your answer/s

1. How does one evaluate the specificity of an antibody? Justify your answer? (2)
2. What are the disadvantages of using an Enhancer trap method for studying the expression pattern of a gene? Give reasons (2)
3. How will you differentiate a germ band extension stage embryo from one that is undergoing germ band retraction? (2)
4. What is the molecular basis of X-Gal reaction? Why is the fixative step critical? (4)
5. What are the pros and cons of using a polyclonal antibody? (2)
6. You have done an immunostaining for a new antibody that you have recently generated. Unfortunately the whole sample is glowing and exhibiting uniform staining all around. What could be possible reason/s for this observation and how do you think you can resolve it? (3)

M.Sc.