

IISER Kolkata

Quiz exam for Biology Laboratory – I : LS1102

Date of examination: 15th November 2018

Total marks:40 & Timings: 1 hour

Name in bold letters:

Roll No:

1. One can see ribosome using

- a. Naked eye
- b. Electron microscope
- c. Light microscope
- d. Spectrophotometer

2. To measure out 1300 ul volume of water, if one is allowed to use a pipette only two times, which one should it be?

- a. P 200 pipette
- b. P 1000 pipette
- c. P 20 pipette
- d. None of the above

3. An RBC when placed in a very hypotonic solution,

- a. Shrinks
- b. Swells
- c. Remains the same
- d. Lyses

4. When placed in a ----- solution, ----- happens due to water moving out of the cells and shrinking the cell membrane away from the cell wall.

- a. Hypotonic and plasmolysis
- b. Hypotonic and deplasmolysis
- c. Hypertonic and plasmolysis
- d. Hypertonic and deplasmolysis.

M. 2a

5. Which of the following leukocytes is found most abundantly in blood?

- a. Eosinophil
- b. Basophil
- c. Neutrophil
- d. Lymphocyte

6. Which dyes are present in Wright's stain, which you have used for staining the blood film?

- a. Haematoxylin and eosin
- b. Methylene blue and eosin
- c. Haematoxylin and Methylene blue
- d. Methylene blue and azure

7. Which of the following blood cells have nuclei that nearly occupy the entire cell?

- a. Red blood cells
- b. Neutrophil
- c. Monocyte
- d. Lymphocyte

8. What might be a probable reason of getting holes in the blood film?

- a. Dust on the slide
- b. Fat or grease on the slide
- c. The spreader slide has a chipped edge
- d. Too much of blood spotted

9. According to Beer-Lambert Law, Absorbance of a molecule dissolved in water is:

- a. Proportional to the chemical structure of the molecule
- b. Proportional to the concentration of the molecule in solution
- c. Proportional to the path length of light

M. Z.

10. DNA when dissolved in an aqueous buffer will show absorbance maxima at:

- a. 590 nm
- b. 260nm
- c. 280nm
- d. 400nm

11. A protein solution absorbs light in the UV range, due to the presence of following amino acid

- a. Alanine
- b. Histidine
- c. Tryptophan
- d. Glycine

12. When a protein solution at low pH is combined with coomassie dye, the color of the solution changes from:

- a. Blue to red
- b. Brown to red
- c. Brown to blue
- d. Brown to green

13. You have collected data from 500 students of a college. You are interested to know what fraction of the students are smokers, and if there is a gender bias for the habit of smoking. Which kind of graph will you use to visualize your data?

- a. Histogram
- b. Pie-chart
- c. Stacked bar
- d. Scatter plot

14. _____ is the estimate of the total number of species present in a community.

- a. Species density
- b. Species diversity
- c. Species richness
- d. None of the above

M. La.

15. Consider the data given below:

	1	2	3	4	5	6	7	8	9
Area A	120	0	25	15	340	0	0	28	5
Area B	62	80	33	9	100	48	0	72	53

You are a conservation biologist. The government wants to convert one of the above areas into a national park. They are of comparable sizes, and the government has no preference for one over the other. Which of these areas would you recommend for the project?

- a. A, because it has higher species diversity
- b. B, because it has more number of species
- c. A, because it has more number of individuals
- d. B, because it has a better distribution of species

16. Which sampling method would you use to estimate tree diversity in a forest?

- a. Quadrat sampling
- b. Point sampling
- c. Transect sampling
- d. None of the above

17. One isolated colony on nutrient agar (Luria Agar) plate appeared after streaking (aseptically) of a loop-full of bacterial suspension represents bacterial cells generated from a single bacterium:

Is this statement always true? If not then why? (1+1 = 2)

18. In an experimental set, two different antibiotics (soaked in small paper discs) resulted in two different diameters of zone of inhibition when placed at the middle of Luria agar plates spread with *Bacillus subtilis*.

Give two probable reasons in favour of the observed result. (1+1=2)

19. For autoclaving of bacterial growth media, we keep the pressure at 15 lbs to:

- a. Keep the temperature at 100 °C inside autoclave
- b. keep the media inside of the flask under pressure
- c. keep the temperature of water vapour at 121°C
- d. To keep the bacteria at the bottom of the flask under pressure

Which one is correct and why (1+1=2)

20. In Gram staining, the Gram negative bacteria fail to retain the colour of crystal violet-iodine complex after washing with ethanol/acetone because:

- a. Gram negative bacteria have thinner layer of peptidoglycan
- b. The lipopolysaccharide layer in the outer membrane gets dissolved in ethanol/acetone
- c. Gram negative bacteria repel crystal violet
- d. Gram negative bacteria degrade crystal violet in presence of ethanol/acetone

Which one(s) is/are true? (2)