

**IISER Kolkata**

**Quiz exam for Biology Laboratory – I : LS1102**

**Date of examination: 15<sup>th</sup> 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.2a.

**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)**