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M.Sc. RNLK-/102(A)/21

**2021**

**Zoology**

**[First Semester]**

**Paper - 102(A)**

**Histochemistry**

*Full Marks : 40*

*Time : 2 hours*

*The figures in the right-hand margin indicate marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

**1. Answer any two from the following : 2×2=4**

- a) Write the difference between normal microtechnique & Cryomicrotechnique.
- b) Write down the composition of Bouin's solution.
- c) What do you mean by artefacts?
- d) What is HOPE fixative?

*(Turn Over)*

( 2 )

**2. Answer any two from the following : 4×2=8**

- a) Why are dyes coloured? What is double staining method? 2+2
- b) Wrote a short note on – “Mordant”. 4
- c) Explain metachromasia with proper example. 4
- d) (i) Write down any two name of fluroscent Labelling reagents.  
(ii) Difference between ‘Biotin and Avidin’.

**3. Answer any one from the following :- 8×1=8**

- a) Explain the Gomori’s Lead phosphate method for identifying acid phosphotase activity. Mention any two acid phosphatase inhibitor names. 6+2
- b) Explain the ‘ABC’ method with proper diagram. Discuss the colloidal gold method and mention its importance in immunohistochemistry. 4+4

Total Pages – 2

M.Sc. RNLK-/ZOO102(B)/21

**2021**

**Zoology**

**[First Semester]**

**Paper - ZOO102(B)**

**(Animal Physiology)**

*Time : 2 hours*

*The figures in the right-hand margin indicate marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

**4. Answer any two questions. 2×2**

- a) What is joint diastole?
- b) Explain the relationship between stroke volume and cardiac output.
- c) What is histotoxic hypoxia?
- d) Explain the difference between ectotherms and endotherms.

*(Turn Over)*

( 2 )

**5. Answer any two questions. 4×2**

- a) What is Frank Starling mechanism? Explain the roles of different calcium channels in SA node.
- b) What is oxidative stress? Briefly explain the roles of different antioxidant enzymes in combating of stress?
- c) Explain the mechanism of countercurrent heat exchanger in case of birds of different habitat.
- d) What is carotid bodies? Explain its role in maintenance of cardiac output.

**6. Answer any one question. 1×8**

- a) What is P50 value in oxygen dissociation curve? Explain the conditions for left ward shift of oxygen dissociation curve? Explain the role of 2,3 BPG in oxyhemoglobin formation. What is erythropoietin?  
2+3+2+1
- b) What is thermal neutral zone (TNZ)? What is shivering thermogenesis? 4+4