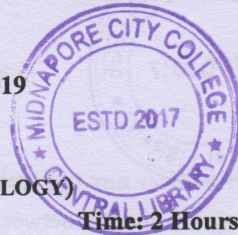


**PG (NEW) CBCS**  
**M.Sc. Semester-I Examination, 2019**  
**ZOOLOGY**  
**PAPER: ZOO-102**  
**(HISTOCHEMISTRY & ANIMAL PHYSIOLOGY)**



Full Marks: 40

Time: 2 Hours

The figures in the margin indicate full marks.

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

Illustrate the answers whenever necessary.

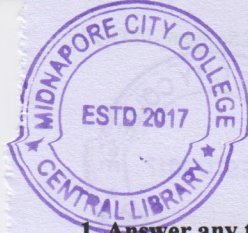
**Use separate Answer Scripts for Group-A & Group-B**

**Group A**

**(HISTOCHEMISTRY)**

- 1. Answer any two questions from the following:** **2×2=4**
- a) What do you mean by 'fixation' ?
  - b) Why 'clearing' is important in histological slide preparation ?
  - c) What is a vital dye ? Give an example.
  - d) Name one dye which is used to stain the nucleus and why ?
- 2. Answer any two of the following questions:** **2×4=8**
- a) Write brief note on 'tissue embedding'.
  - b) Tabulate the steps for 'cryostat' block making and sectioning.
  - c) Name a commonly used tissue embedding media. Write its advantages and disadvantages. **1+3=4**
  - d) Briefly point out the role of ethanol in tissue processing.
- 3. Answer any one of the following questions:** **1×8=8**
- a) What are the steps in processing a tissue for routine histopathology? Explain in detail about section cutting. **4+4=8**
  - b) Give the name and composition of two fixative mixtures used in histopathology. Write note on the tissue processing & staining for immunohistochemistry? **3+5=8**

*(Turn Over)*



(2)

**Group B****(ANIMAL PHYSIOLOGY)****1. Answer any two questions from the following:****2×2=4**

- a) Distinguish between neurogenic and myogenic heart.
- b) What is vagal tone? What happens when vagal tone is lost? (1+1)
- c) Indicate the cell-lineage found in mammalian erythropoiesis by the help of a flow chart.
- d) Highlight the difference between sweating and panting?

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

- a) What are the rhythmicity of different pacemaker tissues of heart? What is Frank-Starling law? Explain the significance of Reynold's number. (1+1+2)
- b) How are reactive oxygen species (ROS) formed? Mention two harmful effects of ROS. Name two anti-oxidants. (2+1+1)
- c) What do you mean by 'oxygen toxicity' in sea-divers? How can it be prevented? (3+1)
- d) What is the normal blood volume in an adult man? State the role of ADH, aldosterone and adrenaline in regulation of blood volume. (1+3)

**3. Answer any one of the following questions:****1×8=8**

- a) What is ECG? What are the 'standard limb leads' for carrying out ECG? Characterize different waves of a normal ECG with illustration. Cite an example of clinical importance of ECG? (1+2+4+1)
- b) Cite an example of heterothermy. Precisely describe the role of hypothalamus as a thermoregulatory centers in mammals. Give an account of the countercurrent heat-exchanger system of Arctic dolphin with illustration. (1+3+4)

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