

G-1/192/22

Roll No.

I Semester Examination, January 2022

M.Sc.

ZOOLOGY

Paper IV

(Methods and Techniques in Zoology)

Time : 3 Hours]

[Max. Marks : 80

Note : All questions are compulsory. Question Paper comprises of 3 Sections. Section A is objective type/multiple choice questions with no internal choice. Section B is short answer type with internal choice. Section C is long answer type with internal choice.

SECTION A

1×8=8

(Objective Type/Multiple Choice Questions)

Choose the correct answer :

1. If an acid is splashed on your skin wash at once with :
- (a) Soap (b) Oil
- (c) Weak acid (d) Plenty of water

P.T.O.

[2]

2. Flammable material like alcohol should never be dispensed or used near :
- (a) an open door (b) an open flame
- (c) another student (d) sink
3. Which of the following microscopy technique create image contrast without using dye or any damage to specimen :
- (a) Compound light microscope
- (b) Phase-contrast microscope
- (c) Electron microscope
- (d) Fluorescence microscope
4. When the power of ocular lense is 10X and objective lense is 40X, the magnification power is :
- (a) 50X (b) 400X
- (c) 30X (d) 4X
5. Which of the following is not a type of radiation detector ?
- (a) Geiger muller counter
- (b) Proportional counter
- (c) Semiconductor detector
- (d) Flam emission detector

G-1/192/22

6. A growing application of MRI is “MRA” which stands for :

- (a) Magnetic Resonance amplification
- (b) Magnetic Resonance Angiography
- (c) Minimal Radio Application
- (d) Medical Research Assistance

7. Agarose can be extracted from which of the following :

- (a) Lyeazusican esculentum
- (b) Agrostis stolonifera
- (c) Ficum benghalensis
- (d) Gracilaria esculentus

8. Differential centrifugation is based on the difference in of biological particles of different

- (a) Size, density
- (b) Sedimentation rate, size and density
- (c) Size, structure
- (d) Mass, size.

SECTION B

6×4=24

(Short Answer Type Questions)

Note : Answer the following questions in **250** words.

1. Describe reference electrode used in pH meter.

Or

Briefly describe absorption and emission spectra.

2. Write a short note on confocal microscope.

Or

Differentiate TEM and SEM.

3. How are samples prepared for counting in G. M. Counter ?

Or

Explain principle of MRI.

4. Enumerate different types of rotors and their purpose.

Or

Discuss various factors that affect electrophoretic mobility.

SECTION C

12×4=48

(Long Answer Type Questions)

Note : Answer the following questions in **500** words.

1. Describe infrared spectrophotometer and its uses.

Or

Explain NMR in detail.

2. Describe principle, construction and uses of phase contrast microscope *Or* fluorescence microscope.
3. Explain principle process and uses of autoradiography

Or

Describe scintillation counter and its application.

4. Write about different types of support media used in electrophoresis.

Or

Describe thin layer chromatography in detail.
How is it superior than paper chromatography.

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