

M.Sc. Examination, 2019

Semester-II

Zoology

Paper – MZCT-201

(Structure and Functions of Animal Tissues)

Time: 3 Hours

Full Marks: 40

Questions are of value as indicated in the margin.

Answer **any four** questions.

1. What are chromogen and auxochrome? Write the basic principle of dye-tissue interactions during histological and histochemical staining. Write the origin, chemistry and application of carmine. 2+5+3=10
 2. What is the source of haematoxylin? Write the methods of its ripening. Why are the Mordants used in haematoxylin preparation? How do you prepare Delafield's haematoxylin and Harris's haematoxylin? Comment on application and staining procedure with haematoxylin. 1+2+2+3+2=10
 3. Name various tissue specific isoforms of alkaline phosphatases (ALP). Name an activator of ALP. Give an account of simultaneous coupling azo-dye method (unsubstituted naphthol method) for detection of ALP. Add a note on specific recommendations for this technique. 2+1+5+2=10
 4. Name the major sites where acid phosphates (ACP) are detected? Name a potent inhibitor of ACP. Why lead is preferred for detection of ACP? Give a schematic diagram showing lead-phosphate method for detection of ACP. 2+1+2+5=10
 5. Give an illustrated account of the histological features of a gastric gland in Mammalian stomach with an emphasis on the structure and functions of its different cell types. 10
 6. Write briefly the histological differences between cortex and medulla of a mammalian kidney. Give an illustrated account of the ultra-filtration apparatus of kidney. What is juxta glomerular apparatus? How does it control ultrafiltration? 2+4+1+3=10
 7. Write short notes on **any four** of the following: 4×2.5=10
 - (a) How does formaldehyde fix tissue?
 - (b) Basic principle of immune-histochemistry.
 - (c) GALT.
 - (d) Ultra-structure of a enterocyte.
 - (e) Space of Disse.
 - (f) Vascular system of liver.
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