



National Testing Service Pakistan

Plot # 96, Street # 4, H-8/1 Islamabad

ELEMENTARY ANATOMY AND MICROTECHNIQUES

SAMPLE PAPER

TIME ALLOWED: 2:20 HOURS (Section B and C) 10 Minutes (Section A)

TOTAL MARKS: SECTION A = 10, B AND C = 40

ANSWER ALL QUESTIONS FROM SECTION A

ANSWER ANY THIRTEEN PARTS FROM SECTION B AND TWO QUESTIONS FROM SECTION C

SECTION – A (Marks 10)

Time allowed: 10 Minutes

NOTE: Section–A is compulsory. All parts of this section are to be answered on the question paper itself. It should be completed in the first 10 minutes and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil.

Q. 1 Circle the correct option i.e. A / B / C / D. Each part carries one mark.

- (i) Which organelle of the cell is termed as processing plant of the cell:
- | | |
|-----------------|-----------------|
| A. Mitochondria | B. Lysosomes |
| C. Centrioles | D. Golgi bodies |
- (ii) Which of the following statements is **TRUE** about the Left Lung?
- | | |
|-----------------------|------------------------|
| A. Longer and slimmer | B. Shorter and slimmer |
| C. Longer and wider | D. Shorter and wider |
- (iii) Chordae tendinae are the structures found in the:
- | | |
|-----------|-------------|
| A. Kidney | B. Heart |
| C. Spleen | D. Pancreas |
- (iv) In which cells is NISSL substance found?
- | | |
|------------------|----------------|
| A. Fibroblasts | B. Nerve cells |
| C. Adipose cells | D. Lymphocytes |
- (v) The recommended fixative for lipids Histochemistry is:
- | | |
|-------------------|----------------------|
| A. Formol calcium | B. Picric acid |
| C. Formaldehyde | D. Mercuric chloride |
- (vi) The fixative which fixes tissues in their natural colour is:
- | | |
|----------------------|-----------------|
| A. Mercuric chloride | B. Formaldehyde |
| C. Picric acid | D. Acetic acid |
- (vii) In case of which microtome is the term 'Slant angle' used?
- | | |
|-------------|----------------|
| A. Rotary | B. Rocking |
| C. Freezing | D. Base sledge |
- (viii) The treatment of tissue sections with 1% acid water is termed as:
- | | |
|--------------------|-------------|
| A. Differentiation | B. Blueing |
| C. Dewaxing | D. Clearing |
- (ix) Commonly used decalcifying agent is:
- | | |
|----------------|----------------------|
| A. Formic acid | B. Nitric acid |
| C. EDTA | D. Hydrochloric acid |
- (x) In which of the following steps of H/E staining is 1% ammonia water used?
- | | |
|----------------|-------------|
| A. Hydration | B. Blueing |
| C. Dehydration | D. Clearing |

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SECTION B

Q. 2 Answer any THIRTEEN parts. The answer to each part should not exceed 2 to 5 lines. (13 x 2 = 26)

- (i) Name any four cytoplasmic organelles.
- (ii) Write down the structure of 'Larynx'. Why is it also called sound box?
- (iii) Pharynx receives seven openings in it. List any four openings.
- (iv) Briefly describe the unit of structure of Kidneys.
- (v) Heart comprises three coats / layers. Write down their names. What type of tissue these are?
- (vi) Name anatomical parts of Human Brain. What are Lateral ventricles?
- (vii) Write down the structure of testis. What is testosterone?
- (viii) Name atypical cervical vertebrae. Why is the seventh cervical vertebra called vertebra prominens?
- (ix) Briefly mention the microscopic features of appendix wall.
- (x) Write down the structure of transitional epithelium. Why is it named so and where it is located?
- (xi) Name the Hormones secreted by anterior lobe of pituitary gland.
- (xii) What are 'Microtechniques'? Write down the significance and scope of this subject of study.
- (xiii) Give any four properties of an ideal fixative.
- (xiv) Write down the working principle and merits of rotary microtome.
- (xv) Briefly describe the method of 'Permanent mounting'. Name any two mounting media.
- (xvi) Define decalcification. Give any two merits of nitric acid as a decalcifying agent.
- (xvii) Write down the features of Haematoxylin stain.

SECTION – C (Marks 14)

Note: Attempt any TWO questions. All questions carry equal marks.

(2 x 7 = 14)

- Q.3** What are 'Stains'? Discuss the steps of Blueing and Differentiation in H/E staining.
- Q.4** Write down the structure of liver. What types of vessels enter and leave the liver substance.
- Q.5** Write down the anatomy and anatomical position of Human Heart. Differentiate between 'Endocardium' and 'Endothelium'.