Histology Examination Answer Keys for Pharmacy Students

- **Section A (40 Marks)**

1	a	b	c	d	**e**	**21**	a	**b**	c	d	e
2	a	b	**c**	d	e	**22**	a	b	c	d	**e**
3	a	b	c	**d**	e	**23**	a	b	**c**	d	e
4	**a**	b	c	d	e	**24**	a	**b**	c	d	e
5	a	b	**c**	d	e	**25**	**a**	b	c	d	e
6	a	b	c	**d**	e	**26**	a	b	**c**	d	e
7	a	**b**	c	d	e	**27**	**a**	b	c	d	e
8	a	b	c	d	**e**	**28**	a	b	c	**d**	e
9	a	b	**c**	d	e	**29**	**a**	b	c	d	e
10	a	b	c	**d**	e	**30**	a	b	c	**d**	e
11	a	**b**	c	d	e	**31**	a	b	**c**	d	e
12	a	b	c	d	**e**	**32**	a	b	c	**d**	e
13	a	b	c	**d**	e	**33**	a	**b**	c	d	e
14	a	b	**c**	d	e	**34**	a	b	**c**	d	e
15	a	**b**	c	d	e	**35**	a	b	**c**	d	e
16	a	**b**	c	d	e	**36**	a	b	c	d	**e**
17	**a**	b	c	d	e	**37**	a	**b**	c	d	e
18	**a**	b	c	d	e	**38**	a	**b**	c	d	e
19	a	b	**c**	d	e	**39**	a	b	**c**	d	e
20	a	b	c	d	**e**	**40**	**a**	b	c	d	e

Section B: (15 Marks)

Answer:

A14 – B5 – C10 – D1 – E13 – F11 – G3 – H2 – I4 – J15
K9 – L6 – M7 – N8 – O12

- ## Section C: (10 Marks : 2 marks each)

1- Enumerate types of connective tissue cells

Answer:

– The ***resident cells*** include: 1) Fibroblasts 2) myofibroblasts 3) Macrophages 4) Adipose cells 5) Mast cells 6) Undifferentiated mesenchymal cells

– The ***wandering cells*** include: 1) Lymphocytes 2) Plasma cells 3) Neutrophils 4) Eosinophils 5) Basophils 6) Monocytes

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2- Enumerate cells of the pituitary gland

Answer:

Cells of the pituitary are either chromophil or chromophobe cells.

Cromophils (48 %): include acidophil and basophil cells.

The acidophils include:

- Somatotrophs.
- Mammotrophs.

The basophils include:

- Thyrotrophs.
– Gonadotrophs
– Corticotrophs

3- Enumerate cells of the gastric mucosa

Answer:

1) Chief cells (or zymogenic cells):
2) Parietal cells (or oxyntic cells):
3) Mucous neck cells:
4) Endocrine cells

4- Enumerate (by order) cells forming spermatozoa

Answer:

1) Type A sperm atogonia
2) Type B spermatogonia
3) Primary spermatocytes
4) Secondary spermatocytes
5) Spermatids
6) Spermatozoa

5- Enumerate (by order) layers of the retina

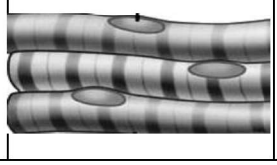
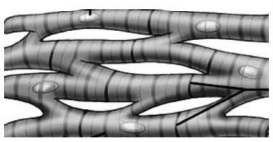
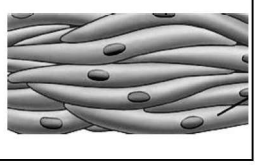
Answer:

1) The pigmented epithelium.
2) Layer of rods and cones.
3) Outer limiting membrane.
4) Outer nuclear layer.
5) Outer plexiform layer.
6) Inner nuclear layer.
7) Inner plexiform layer.
8) Ganglion cell layer
9) Optic nerve fiber layer.
10) Inner limiting membrane layer.

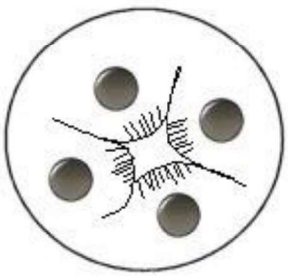
- **Section D: (5 Marks)**

1) Comparison of different types of muscles

Comparison of Muscles Types

	Skeletal	Cardiac	Smooth
Site	Attached to skeleton	Heart	Viscera & blood vessels
Control	Voluntary	Involuntary	Involuntary
Fibers	Parallel, non branching (except in the face & tongue)	Branching and anastomosing	Fusiform
Nuclei	Multiple, peripheral	Single, central	Single, central
Striations	+++	+	-
Sarcomere	+++	+	-
Intercalated discs	-	+	-
Mitochondria	++	+++	+
Regeneration	by satellite cells	non	Mitosis
Shape			

3) Comparison of renal proximal and distal convoluted tubules

	Proximal	**Distal**
Diameter	wider	narrower
Lumen	narrower	wider
Number of cells	3-5	5-8
Staining	Granular & acidophilic	Non-granular, less acidophilic
Cell boundaries	indistinct	distinct
Basal processes	+	++
Brush border	+	–
Functions	1-Reabsorption of water (sodium pump), sugar & amino acids. 2-Excretion of some metabolites (dyes and penicillin)	Reabsorption of water under the effect of ADH and aldosterone.
Shape		

- **Section E: (10 Marks)**

1) Golgi apparatus has a ***convex immature*** face which receives the transport vesicles from rER and ***mature concave*** face which releases the secretory vesicles.
2) Epithelium which consists of a single layer is called ***simple***, while that which have multiple layers is called ***stratified***.
3) Types of connective tissue fibers include: ***collagen, elastic and reticular***.
4) Compact (dense) bone have structural units called: ***osteons (or Haversian systems)***
5) Nerve cells contain the characteristic ***Nissl*** granules in their cytoplasm.