

[KD 224]    APRIL 2001    Sub. Code : 2237

M.S. DEGREE EXAMINATION.

(Revised Regulations)

Branch V — Anatomy

Paper III — HISTOLOGY, NEURO ANATOMY AND  
MUSEUM TECHNIQUES

Time : Three hours

Maximum : 100 marks

1. Describe the histological structure of different parts of respiratory system and correlate their functions with their structure. (25)
2. Describe the various thalamic nuclei, their connections and blood supply (25)
3. Write briefly on : (5 × 10 = 50)
  - (a) Microscopic anatomy and ultra structure of renal corpuscle.
  - (b) Edinger west-phal nucleus.
  - (c) Fornix
  - (d) Embedding media.
  - (e) Fixatives.

**NOVEMBER 2001**

**[KE 224]**

**Sub. Code : 2237**

**M.S. DEGREE EXAMINATION.**

**(Revised Regulations)**

**Branch V — Anatomy**

**Paper III — HISTOLOGY, NEUROANATOMY AND  
MUSEUM TECHNIQUES**

**Time : Three hours**

**Maximum : 100 marks**

**Answer ALL questions.**

1. Describe the histology of blood vessels and correlate their structure with function. (25)
2. Describe the pathways responsible for carrying the sensations of touch and pressure. (25)
3. Write briefly on : (5 × 10 = 50)
  - (a) Microscopic anatomy and ultrastructural appearance of skeletal muscle.
  - (b) Nucleus of tractus solitarius
  - (c) Corpus callosum.
  - (d) Embalming a cadaver.
  - (e) Golgi complex.

**[KG 224] MARCH 2002 Sub. Code : 2237**

**M.S. DEGREE EXAMINATION.**

**(Revised Regulations)**

**Branch V — Anatomy**

**Paper III — HISTOLOGY AND NEUROANATOMY  
AND MUSEUM TECHNIQUES**

**Time : Three hours Maximum : 100 marks**

**Answer ALL questions.**

1. With necessary illustrations describe all types of follicles in a ovary of human female. (26)
2. With illustrations describe the blood supply of human brain. (26)
- 3 Write in detail :
  - (a) Plastination. (24)
  - (b) Preservation of human fetuses. (24)

**SEPTEMBER 2002**

**[KH 224]**

**Sub. Code : 2237**

**M.S. DEGREE EXAMINATION.**

**Branch V — Anatomy**

**Paper III — HISTOLOGY, NEUROANATOMY AND  
MUSEUM TECHNIQUES**

**Time : Three hours**

**Maximum : 100 marks**

**Answer ALL questions.**

1. With necessary illustrations describe all the cell types in a seminiferous tube of man. (26)
  2. With illustrations describe the blood supply of the spinal cord. (26)
  3. Write in detail :
    - (a) Describe micro anatomy of thymus correlating it with functional requirement. (24)
    - (b) Preservation of wet specimen. (24)
-

[KI 224]      **APRIL 2003**      **Sub. Code : 2237**

**M.S. DEGREE EXAMINATION.**

**(Revised Regulations)**

**Anatomy**

**Paper III — HISTOLOGY, NEUROANATOMY AND  
MUSEUM TECHNIQUES**

**Time : Three hours                      Maximum : 100 marks**

**Answer ALL questions.**

1. Describe the anatomical basis of the optic pathway. Mention the effects of lesions at different levels along the optic pathway. (25)
  2. Describe the microanatomy of the Pancreas. (25)
  3. Write briefly on : (5 × 10 = 50)
    - (a) Method of making and preserving gross anatomy cross sections
    - (b) Staining techniques for nerve tissue
    - (c) Ultrastructure of juxta glomerular apparatus
    - (d) Spermatogenesis
    - (e) Myelination.
-



[KK 224]

APRIL 2004

Sub. Code : 2237

M.S. DEGREE EXAMINATION.  
(Revised Regulations)  
Anatomy

Paper III — HISTOLOGY, NEUROANATOMY AND  
MUSEUM TECHNIQUES

Time : Three hours                      Maximum : 100 marks

Theory : Two hours and                      Theory : 80 marks  
forty minutes

M.C.Q. : Twenty minutes                      M.C.Q. : 20 marks

Answer ALL the questions.

A. Write an Essay on :                      (2 × 15 = 30)

- (1) Describe the histology of spleen.
- (2) Discuss the Blood supply of cerebral hemispheres.

B. Write short notes on :                      (10 × 5 = 50)

- (1) Pineal gland
- (2) Insula
- (3) Structure of testes
- (4) Periodic Acid Schiff reaction (PAS)

- (5) Lentic form nucleus
- (6) Histology of lung
- (7) Neurobiotaxis
- (8) Plastination technique
- (9) Embalancing of HIV infected dead bodies
- (10) Blood brain barrier.

**AUGUST 2004**

**[KL 224]**

**Sub. Code : 2237**

**M.S. DEGREE EXAMINATION.**

**(Revised Regulations)**

**Anatomy**

**Paper III — HISTOLOGY, NEURO ANATOMY AND  
MUSEUM TECHNIQUES**

**Time : Three hours**

**Maximum : 100 marks**

**Theory : Two hours and  
forty minutes**

**Theory : 80 marks**

**MCQ : Twenty minutes**

**MCQ : 20 marks**

**Answer ALL questions.**

**I. Write an Essay on : (2 × 15 = 30)**

**(1) Describe the course and branches of  
mandibular division of Trigeminal nerve**

**(2) Describe the micro-anatomy of lung.**

**II. Write short notes on : (10 × 5 = 50)**

**(a) P.A.S. Staining.**

**(b) Microtome.**

**(c) Electron microscope.**

**(d) Optic nerve.**

**(e) Nuclei of Thalamus.**

**(f) Fourth ventricle.**

**(g) Histology of Bone.**

**(h) Mounting an organ**

**(i) Australopithecus**

**(j) Methylene blue.**



**FEBRUARY 2005**

**[KM 224]**

**Sub. Code : 2237**

**M.S. DEGREE EXAMINATION.**

(Revised Regulations)

Branch V — Anatomy

**Paper III — HISTOLOGY, NEURO ANATOMY AND  
MUSEUM TECHNIQUES**

Time : Three hours

Maximum : 100 marks

Theory : Two hours and  
forty minutes

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Write an Essay on : (2 × 15 = 30)

(1) Describe the origin, functional components, branches and applied anatomy of Facial nerve.

(2) Describe the micro anatomy of pituitary gland giving their applied importance.

II. Write Short notes on : (10 × 5 = 50)

- (a) Pterygo palatine ganglion.
- (b) Cerebellar nuclei and their functions.
- (c) Sharpening of microtome blade.
- (d) Microstructure of stomach.
- (e) Internal capsule.
- (f) Cerebral dominance.
- (g) Special stains used for connective tissue staining.
- (h) Auditory pathway.
- (i) Microscopic structure of Prostate.
- (j) Preservative fluids used for museum specimens.

**FEBRUARY 2006**

**[KO 224]**

**Sub. Code : 2237**

**M.S. DEGREE EXAMINATION.**

**(Revised Regulations)**

**Branch V — Anatomy**

**Paper III — HISTOLOGY, NEURO ANATOMY AND  
MUSEUM TECHNIQUES**

**Time : Three hours**

**Maximum : 100 marks**

**Theory : Two hours and  
forty minutes**

**Theory : 80 marks**

**M.C.Q. : Twenty minutes**

**M.C.Q. : 20 marks**

**Answer ALL questions.**

**Draw suitable diagrams wherever necessary.**

**I. Write essays on : (2 × 15 = 30)**

**(1) Describe the lobes, gyri and sulci of the cerebral hemisphere.**

**(2) Describe the microscopic feature of pancreas in detail.**

**II. Write short notes on : (10 × 5 = 50)**

**(a) Extra pyramidal system**

**(b) Ciliary ganglion.**

**(c) Dentate nucleus.**

**(d) Cysterna.**

**(e) Histological differences between thymus, tonsil lymph node.**

**(f) Juxta glomerular apparatus.**

**(g) Embalming process.**

**(h) Maintenance of museum.**

**(i) Sensory decussation of Medulla (neat labelled diagram only)**

**(j) Choroid plexus.**



[KQ 220] MARCH 2007 Sub. Code : 2237

M.S. DEGREE EXAMINATION.

Branch V --Anatomy

HISTOLOGY, NEURO ANATOMY AND  
MUSEUM TECHNIQUES

Common to

Paper III -- (Old/New/Revised Regulations)

(Candidates admitted from 1988-89 onwards)

and

Paper III -- (for candidates admitted from 2004-2005  
onwards)

Time : Three hours Maximum : 100 marks

Theory : Two hours and Theory : 80 marks  
forty minutes

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Essay :

1. Classify Lymphoid Organs. Describe their  
microstructure with functional correlation. (20)

2. Describe the Facial Nerve (15)

3. Discuss Blood supply of Spinal Cord. (15)

II. Short notes : (6 × 5 = 30)

(a) Plastination.

(b) Enteric nervous system

(c) Neuroglia

(d) Formalin

(e) Sertoli cell

(f) Chemical basis and principles of  
Haematoxylin and Eosin staining.

SEPTEMBER 2007

KR 230]

Sub. Code : 2235

M.S. DEGREE EXAMINATION.

Branch V — Anatomy

HISTOLOGY, NEURO ANATOMY AND  
MUSEUM TECHNIQUES

Common to

Paper III — (Old/New/Revised Regulations)

(Candidates admitted upto 2003-04)

and

Paper III — (For candidates admitted from 2004-2005  
onwards)

Time : Three hours                      Maximum : 100 marks

Theory : Two hours and                      Theory : 80 marks  
forty minutes

M.C.Q. : Twenty minutes                      M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Essay questions :

(1) Describe the histology of cerebellum.  
Describe their microstructure with functional  
correlation (20)

(2) Describe the oculomotor nerve. (15)

(3) Discuss blood supply of rectum and anal  
canal. (15)

II. Short notes : (6 × 5 = 30)

(a) Juxtaglomerular apparatus

(b) Special visceral afferent column

(c) Museum mounting

(d) Embalming

(e) Myoepithelial cell

(f) Histological differences between thymus,  
tonsil, lymphnode.

March-2008

**[KS 230]**

**Sub. Code : 2235**

**M.S. DEGREE EXAMINATION.**

**Branch V — Anatomy**

**HISTOLOGY, NEURO ANATOMY AND MUSEUM  
TECHNIQUES**

**(Common to all candidates)**

**Q.P. Code : 22235**

**Time : Three hours**

**Maximum : 100 marks**

**Answer ALL questions.**

**I. Essay questions : (2 × 20 = 40)**

(1) Describe the microscopic anatomy of respiratory pathway.

(2) Describe the fourth ventricle of brain in detail.

**II. Short notes : (10 × 6 = 60)**

(1) Microscopic structure of pancreas.

(2) Microscopic structure of suprarenal gland.

(3) Microscopic structure of spleen.

(4) Microscopic structure of bone.

(5) Nerve supply to the tongue.

(6) Trochlear nerve.

(7) Embalming fluid.

(8) Preservation of museum specimens.

(9) Otic ganglion.

(10) Haematoxyline and eosin staining.

September 2008

[KT 230]

Sub. Code: 2235

**M.S. DEGREE EXAMINATION**

**Branch V – ANATOMY**

**Paper III – HISTOLOGY, NEUROANATOMY AND  
MUSEUM TECHNIQUES**

**(Common to all candidates)**

*Q.P. Code : 222235*

**Time : Three hours**

**Maximum : 100 marks**

**Draw suitable diagram wherever necessary.**

**Answer ALL questions.**

**I. Essay questions :**

**(2 X 20 = 40)**

1. Describe the microscopic structure of lining epithelium of male genital system.
2. Describe the internal capsule and add a note on blood supply.

**II. Write short notes on :**

**(10 X 6 = 60)**

1. Double embedding.
  2. Plastination techniques.
  3. Clearing agents.
  4. Blood brain barrier.
  5. Histology of growing end of long bone.
  6. Mounting of brain sections.
  7. Histology of lung.
  8. Cochlea.
  9. Basal ganglion and its connections.
  10. Histology of pituitary gland.
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March 2009

[KU 230]

Sub. Code: 2235

**M.S. DEGREE EXAMINATION**

**Branch V – ANATOMY**

**(Common to all candidates)**

**Paper III – HISTOLOGY, NEUROANATOMY  
AND MUSEUM TECHNIQUES**

***Q.P. Code : 22235***

**Time : Three hours**

**Maximum : 100 marks**

**Answer ALL questions**

**Draw suitable diagram wherever necessary.**

**I. Essay questions :**

**(2 x 20 = 40)**

1. Describe the gross anatomy and histological features of the cerebellum.
2. Describe the histology of the liver.

**II. Write short notes on :**

**(10 x 6 = 60)**

1. Method of making casts of the tracheo bronchial tree.
2. Connective tissue stains.
3. Clearing agents.
4. Histology of pancreas.
5. Circumventricular organs.
6. Diffuse neuro endocrine system.
7. Venous drainage of cerebrum.
8. Pyramidal tract.
9. Nucleus ambiguus.
10. Electron microscopy of Glomerular filtration.

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September 2009

[KV 230]

Sub. Code: 2235

**M.S. DEGREE EXAMINATION**

**Branch V – ANATOMY**

**(Common to all candidates)**

**Paper III – HISTOLOGY, NEUROANATOMY  
AND MUSEUM TECHNIQUES**

*Q.P. Code : 222235*

**Time : Three hours**

**Maximum : 100 marks**

**Answer ALL questions**

**Draw suitable diagram wherever necessary.**

**I. Essay questions :**

**(2 x 20 = 40)**

1. Give a detailed account of functional histology of lymphoid organs.
2. Mention the nuclei, course, relations and distribution of glossopharyngeal nerve.

**II. Write short notes on :**

**(10 x 6 = 60)**

1. Micro anatomy of pituitary gland.
2. Microtome.
3. Microscopic structure of cardiac muscle.
4. Histological structure of liver.
5. Preparation of resin casts of blood vessels.
6. Blood supply of spinal cord.
7. Subarachnoid cisterns.
8. Cerebral angiography
9. Nuclei of cerebellum.
10. Preparation of illustrated catalogues of mounted museum specimens.

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March 2010

[KW 230]

Sub. Code: 2235

**M.S. DEGREE EXAMINATION**

**Branch V – ANATOMY**

**(Common to all candidates)**

**Paper III – HISTOLOGY, NEUROANATOMY  
AND MUSEUM TECHNIQUES**

***Q.P. Code : 222235***

**Time : Three hours**

**Maximum : 100 marks**

**Answer ALL questions**

**Draw suitable diagram wherever necessary.**

**I. Essay questions :**

**(2 x 20 = 40)**

1. Describe the limbic system in detail.
2. Describe the microscopic structure of digestive system at various levels.

**II. Write short notes on :**

**(10 x 6 = 60)**

1. Corpora quadrigemina and their connections.
2. Blood supply of internal capsule.
3. Commissures of brain.
4. Subarachnoid cisterns.
5. Embalming techniques.
6. Microtome.
7. Plastination.
8. Double embedding.
9. Juxta Glomerular apparatus.
10. Microscopic structure of suprarenal gland.

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MAY 2011

[KY 118]

Sub. Code: 2091

M.D. DEGREE EXAMINATION

BRANCH XXIII – ANATOMY

HISTOLOGY, NEUROANATOMY AND MUSEUM TECHNIQUES

*Q.P. Code : 202091*

**Time : 3 hours  
(180 Min)**

**Maximum : 100 marks**

**Answer ALL questions in the same order.**

**I. Essay :**

	<b>Pages (Max.)</b>	<b>Time (Max.)</b>	<b>Marks (Max.)</b>
1. Mention the nuclei, course, relations and distribution of the facial nerve.	6	15	10
2. Describe the microscopic anatomy of the testis and epididymis.	6	15	10

**II. Short Questions:**

1. Membranous ossification.	3	8	5
2. Scanning electron microscope.	3	8	5
3. Microscopic structure of kidney.	3	8	5
4. Basal nuclei.	3	8	5
5. Methylene blue.	3	8	5
6. Nerve fibre stains.	3	8	5
7. Sertoli cell.	3	8	5
8. Red pulp of spleen.	3	8	5

**III. Reasoning Out:**

Each of the following questions has a stem followed by five options. Mention whether the options are TRUE or FALSE and mention the REASON.

1. The duodenum has			
a) Villi			
b) Crypts of Lieberkuhn			
c) Valves of Kerkring			
d) Muscularis mucosa			
e) Serous glands in the submucosa.	4	10	5

**(PTO)**

	<b>Pages (Max.)</b>	<b>Time (Max.)</b>	<b>Marks (Max.)</b>
2. An oligodendrocyte			
a) Has a rounded cell body			
b) Has numerous processes			
c) Can provide a myelin sheath for three axons			
d) Is related to a node of Ranvier			
e) Is mesodermal in origin.	4	10	5
3. Immuno-histochemistry			
a) Involves localization of neurotransmitters			
b) Makes use of monoclonal antibodies			
c) Can label proteins			
d) Makes use of enzymes			
e) Makes use of fluorescent dyes.	4	10	5
4. The microscopic structure of the cerebellum			
a) There are olivo-cerebellar mossy fibres			
b) Granule cells form parallel fibres			
c) Basket cells are in the granular layer			
d) Golgi cells are in the molecular layer			
e) Purkinje cells ramify in the long axis of the folia	4	10	5
<b>IV. Very Short Answers :</b>			
1. Name the two types of adipose tissue.	1	4	2
2. Name the two layers of the dermis.	1	4	2
3. Name the two parts of the gastro-intestinal tract with submucosal Glands.	1	4	2
4. Name the two types of cells found in the parathyroid gland.	1	4	2
5. Name the papillae that contain taste buds.	1	4	2
6. Which nucleus of the trigeminal nerve contains first order neurons?	1	4	2
7. Which cell of the cerebellum forms the parallel fibres?	1	4	2
8. The lateral lemniscus is part of which pathway.	1	4	2
9. Mention the chemicals used in defatting in the preparation of stained foetal skeletons.	1	4	2
10. Name one substance used in corrosion casts.	1	4	2

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October 2011

[KZ 118]

Sub. Code: 2091

**M.D. DEGREE EXAMINATION  
BRANCH XXIII – ANATOMY  
HISTOLOGY, NEUROANATOMY AND MUSEUM TECHNIQUES  
Q.P. Code : 202091**

**Time : 3 hours  
(180 Min)**

**Maximum : 100 marks**

**Answer ALL questions in the same order.**

**Pages Time Marks  
(Max.) (Max.) (Max.)**

**I. Essay:**

- |   |   |    |    |
|---|---|----|----|
| 1. Describe lateral ventricle of Brain. | 6 | 15 | 10 |
| 2. Histology of Kidney.                 | 6 | 15 | 10 |

**II. Short Questions:**

- |                                    |   |   |   |
|------------------------------------|---|---|---|
| 1. Corpus callosum.                | 3 | 8 | 5 |
| 2. Multipolar neurons.             | 3 | 8 | 5 |
| 3. Nuclei in medulla.              | 3 | 8 | 5 |
| 4. Nucleus in inferior colliculus. | 3 | 8 | 5 |
| 5. Structure of parotid gland.     | 3 | 8 | 5 |
| 6. Histology of cardiac muscle.    | 3 | 8 | 5 |
| 7. Structure of uterus.            | 3 | 8 | 5 |
| 8. Histology of mammary gland.     | 3 | 8 | 5 |

**III. Reasoning Out:**

Each of the following sentences have a stem and are followed by five options. Mention whether the options are TRUE or FALSE and mention the REASON

- |  |   |    |   |
|--|---|----|---|
| 1. Lung  |   |    |   |
| a) Alveoli lined by squamous epithelium.                           |   |    |   |
| b) Clara cells secrete surfactant.                                 |   |    |   |
| c) Contain much fibromuscular tissue.                              | 4 | 10 | 5 |
| d) Lining epithelium is transitional.                              |   |    |   |
| e) Trachea and larger bronchi lined by ciliated columnar.          |   |    |   |
| 2. Liver   |   |    |   |
| a) Cells are radiating from the central vein.                      |   |    |   |
| b) Portal triad is present in the periphery.                       |   |    |   |
| c) Central vein drains in to hepatic veins.                        | 4 | 10 | 5 |
| d) Blood from portal vein and hepatic artery flow in to sinusoids. |   |    |   |
| e) Bile canaliculi has no wall.                                    |   |    |   |

(PTO)

	<b>Pages (Max.)</b>	<b>Time (Max.)</b>	<b>Marks (Max.)</b>
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3. Uterine tube

- a) Line by ciliated columnar epithelium.
- b) Has numerous folding.
- c) Corpora amylacea present.
- d) Intercalary cells present.
- e) Secreting cells called pegcells present.

	4	10	5
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4. Cerebellum

- a) Cortex has 3 layers.
- b) Purkinje cells are present.
- c) Granular layer is characteristic.
- d) Mossy fibres present.
- e) Most of the fibres are climbing fibres.

	4	10	5
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**IV. Very Short Answers :**

- |                           |   |   |   |
|---------------------------|---|---|---|
| 1. Pineal gland.          | 1 | 4 | 2 |
| 2. Mammillary body.       | 1 | 4 | 2 |
| 3. Uncus.                 | 1 | 4 | 2 |
| 4. Dentate gyrus.         | 1 | 4 | 2 |
| 5. Olfactory epithelium.  | 1 | 4 | 2 |
| 6. Types of ossification. | 1 | 4 | 2 |
| 7. Intervertabral disc.   | 1 | 4 | 2 |
| 8. Hair follicles.        | 1 | 4 | 2 |
| 9. Spinal ganglion.       | 1 | 4 | 2 |
| 10. Tastebud.             | 1 | 4 | 2 |

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[LA 118]

April 2012

Sub. Code: 2091

**M.D. DEGREE EXAMINATIONS**

**BRANCH XXIII – ANATOMY**

**PAPER III – HISTOLOGY, NEUROANATOMY AND MUSEUM TECHNIQUES**

*Q.P. Code : 202091*

**Time : 3 hours  
(180 Min)**

**Maximum : 100 marks**

**Answer ALL questions in the same order.**

**Pages Time Marks  
(Max.) (Max.) (Max.)**

**I. Essay:**

- |   |   |    |    |
|---|---|----|----|
| 1. Mention the nuclei, course, relations and distribution of Hypoglossal nerve. | 9 | 15 | 10 |
| 2. Describe the microscopic anatomy of Liver and Gall bladder.                  | 9 | 15 | 10 |

**II. Short Questions:**

- |  |   |   |   |
|--|---|---|---|
| 1. Type 1 collagen fibers                          | 3 | 8 | 5 |
| 2. Objective lens of a microscope                  | 3 | 8 | 5 |
| 3. Islets of pancreas                              | 3 | 8 | 5 |
| 4. Lamina present in anterior horn of spinal cord  | 3 | 8 | 5 |
| 5. Principles of Haematoxylin and eosin staining   | 3 | 8 | 5 |
| 6. Orison stain for elastic fibres                 | 3 | 8 | 5 |
| 7. Histological features parietal cells of stomach | 3 | 8 | 5 |
| 8. Germinal centre of lymph node                   | 3 | 8 | 5 |

**III. Reasoning Out:**

Each of the following questions has a stem followed by five options. Mention whether the options are TRUE or FALSE and mention the REASON.

- |   |   |    |   |
|---|---|----|---|
| 1. Microscopic structure of fundic part of stomach        |   |    |   |
| a) The lining epithelium is simple columnar               |   |    |   |
| b) Gastric glands are simple tubular glands               |   |    |   |
| c) Gastric pits are deeper in the pyloric part of stomach | 5 | 10 | 5 |
| d) Gastric glands are found in the submucosa              |   |    |   |
| e) Chief cells are found throughout the gland             |   |    |   |

(PTO)

## April 2012

### 2. Satellite cell

- a) They provide structural support
- b) They are more numerous in spinal ganglia
- c) They form the capsule of the ganglion 5 10 5
- d) They can give rise to Schwann cells
- e) They help to transport substances to the nerve cells

### 3. M cells

- a) They are found throughout the small intestine
- b) They are associated with groups of lymphoid follicles
- c) They help in antigen uptake 5 10 5
- d) They lack microvilli
- e) They are cuboidal in shape

### 4. Microscopic structure of pituitary

- a) Chromophils are more numerous than chromophobes
- b) Chromophobes are degranulated cells
- c) Pituicytes are supporting cells found in pars nervosa 5 10 5
- d) Cells in pars intermedia are acidophils
- e) Herring bodies are found in pars distalis

## IV. Very Short Answers :

- 1. Name the cells found in the intestinal gland. 1 4 2
- 2. What constitutes the blood air barrier? 1 4 2
- 3. Name two substances found in the extracellular matrix of connective tissue. 1 4 2
- 4. Name two cells rich in smooth endoplasmic reticulum 1 4 2
- 5. When is gelatin used as an embedding medium? 1 4 2
- 6. Name two stains used for muscle fibres. 1 4 2
- 7. What are centroacinar cells? 1 4 2
- 8. Name two glands where striated ducts are present. 1 4 2
- 9. Name two nuclear fixatives. 1 4 2
- 10. Name two types of cell junctions. 1 4 2

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[LB 118]

OCTOBER 2012

Sub. Code: 2091

M.D. DEGREE EXAMINATIONS

BRANCH XXIII – ANATOMY

PAPER III – HISTOLOGY, NEUROANATOMY AND MUSEUM TECHNIQUES

Q.P. Code : 202091

Time : 3 hours  
(180 Min)

Maximum : 100 marks

Answer ALL questions in the same order.

Pages Time Marks  
(Max.) (Max.) (Max.)

**I. Essay:**

- |   |   |    |    |
|---|---|----|----|
| 1. Mention the nuclei, course, relations and distribution of Vagus nerve. | 9 | 15 | 10 |
| 2. Describe the microscopic anatomy of Small Intestine.                   | 9 | 15 | 10 |

**II. Short Questions:**

- |   |   |   |   |
|---|---|---|---|
| 1. Matrix of hyaline cartilage                            | 3 | 8 | 5 |
| 2. Method of honing a knife                               | 3 | 8 | 5 |
| 3. Histological features of interstitial cells of Leydig. | 3 | 8 | 5 |
| 4. Ventral posterolateral nucleus of thalamus             | 3 | 8 | 5 |
| 5. Delafield's haematoxylin                               | 3 | 8 | 5 |
| 6. Use of Periodic Acid Schiff stain in Diagnostic work   | 3 | 8 | 5 |
| 7. Thyrotrophs of anterior lobe of pituitary.             | 3 | 8 | 5 |
| 8. Graafian follicle                                      | 3 | 8 | 5 |

**III. Reasoning Out:**

Each of the following questions has a stem followed by five options. Mention whether the options are TRUE or FALSE and mention the REASON.

- |  |   |    |   |
|--|---|----|---|
| 1. The jejunum has<br>a) Villi<br>b) Crypts of Lieberkuhn<br>c) Valves of Kerkring<br>d) Muscularis mucosa<br>e) Peyer's patches in the lamina propria | 5 | 10 | 5 |
| (PTO)  |   |    |   |
| 2. Schwann cells<br>a) Produce myelin for nerves in the peripheral nervous system<br>b) Node of Ranvier is a segment of myelin produced                |   |    |   |

- by a Schwann cell
- c) A single Schwann cell can produce myelin sheath for only a single nerve fibre 5 10 5
- d) Unmyelinated axons can be found invaginated into a Schwann cell
- e) They develop from mesoderm
3. Paraffin wax
- a) It is the most commonly used wax
- b) It is a mixture of hydrocarbons
- c) Softer paraffin wax is used for friable tissues 5 10 5
- d) It is a water soluble wax
- e) It is used to embed nervous tissue
4. Microscopic structure of cerebrum
- a) Horizontal cells of Cajal are found in the molecular layer
- b) Cells of Martinotti are found in laminae VI
- c) Outer band of baillarger is prominent in the visual cortex 5 10 5
- d) Inner band of baillarger is found in lamina V
- e) Stellate cells are found throughout the cerebral cortex

#### IV. Very Short Answers :

- |   |   |   |   |
|---|---|---|---|
| 1. Name two features of an osteoblast.                  | 1 | 4 | 2 |
| 2. What is substantia propria of the cornea made up of? | 1 | 4 | 2 |
| 3. Name two stains used for collagen fibres.            | 1 | 4 | 2 |
| 4. What fibres are found in the stroma of a gland?      | 1 | 4 | 2 |
| 5. What is a sarcomere?                                 | 1 | 4 | 2 |
| 6. What is stria vascularis?                            | 1 | 4 | 2 |
| 7. Name two functions of Sertoli cells.                 | 1 | 4 | 2 |
| 8. What is meant by resin embedding?                    | 1 | 4 | 2 |
| 9. Name two mounting media.                             | 1 | 4 | 2 |
| 10. Name two properties of Bouin's fluid.               | 1 | 4 | 2 |

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**M.D. DEGREE EXAMINATIONS**  
**BRANCH XXIII – ANATOMY**  
**PAPER III – HISTOLOGY, NEUROANATOMY AND MUSEUM**  
**TECHNIQUES**  
*Q.P. Code : 202091*

**Time: Three Hours**

**Maximum: 100 marks**

**I. Essay:**

**(2X10=20)**

1. Mention the nuclei, course, relations and distribution of Glossopharyngeal nerve.
2. Describe the microscopic anatomy of uterus and fallopian tube.

**II. Short Questions:**

**(8X5=40)**

1. Zones present in endochondral ossification.
2. Principles of Transmission Electron Microscopy.
3. Microscopic structure of cortex of suprarenal gland
4. Posterior limb of internal capsule
5. Mallory's trichrome stain
6. Oil red O stain for fat
7. Somatotrophs of anterior lobe of pituitary gland
8. Pencillar artery of spleen

**III. Reasoning Out:**

**(4X5=20)**

Each of the following questions has a stem followed by five options. Mention whether the options are TRUE or FALSE and mention the REASON.

1. The jejunum has
  - a) Villi
  - b) Crypts of Leiberkuhn
  - c) Valves of Kerkring
  - d) Muscularis mucosa
  - e) Serous glands in the submucosa
  
2. Astrocytes
  - a) They are star shaped cells
  - b) Their processes frequently end in relation to blood vessels
  - c) Fibrous astrocytes are seen mainly in grey matter
  - d) Helps to maintain the blood brain barrier
  - e) Act as phagocytes
  
3. Fixing of tissues in histology is done to
  - a) Prevent autolysis
  - b) Preserve colour of tissues
  - c) Preserve enzymes
  - d) Prevent putrefaction
  - e) Make tissues rigid

**(PTO)**

4. Microscopic structure of retina

- a) Outer nuclear layer contains the cell bodies and nuclei of rods and cones
- b) Inner nuclear layer contains the cell bodies and nuclei of bipolar neurons
- c) Muller's cells present are supporting cells
- d) Inner limiting membrane is formed by axons of ganglion cells
- e) Amacrine cells are found in the inner nuclear layer

**IV. Very Short Answers:**

**(10X2=20)**

1. Name two types of fibres produced by the fibroblast.
2. Name the layers of the choroid.
3. Name two parts of the gastrointestinal tract that have lymphoid follicles in the lamina propria.
4. What is meant by closed circulation of spleen?
5. Name two supporting cells found in the organ of corti.
6. Name the two cells found in pineal gland.
7. Name the cells found in a taste bud.
8. Name two clearing agents.
9. What is meant by double embedding?
10. Mention two agents used to decalcify bone.

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[LE 118]

APRIL 2014

Sub. Code: 2091

**M.D. DEGREE EXAMINATION  
BRANCH XXIII – ANATOMY  
PAPER III – HISTOLOGY, NEURO ANATOMY AND MUSEUM  
TECHNIQUES  
Q.P. Code :202091**

**Time : Three Hours**

**Maximum : 100 marks**

**I. Essay:**

**(2X10=20)**

1. Describe the nuclei, course, relations and distribution of Facial nerve.
2. Describe the microscopic structure of the lining epithelium of Respiratory tract.

**II. Write short notes on:**

**(8X5=40)**

1. Cells present in the Pineal gland.
2. Histology of Vermiform Appendix.
3. Corpuscles of Hassall.
4. Rotary Microtome.
5. Tectum of Midbrain.
6. Circle of Willis.
7. Cells of connective tissue.
8. Juxta glomerular apparatus.

**III. Reasoning Out:**

**(4X5=20)**

**State whether each of the following is TRUE and FALSE and reason out.**

1. Routine Embalming procedures involve bathing of abdominal viscera in the injected embalming fluid.
2. More than two lobules of the mammary gland are drained by a single lactiferous duct, all of which converge to open independently.
3. The cerebral aqueduct is narrow due to the roof plate of midbrain remaining thick during development.
4. Presence of intercalated discs and branching pattern are functional adaptations of the cardiac muscles.

**IV. Very Short Answers:**

**(10X2=20)**

1. Name the two layers of perichondrium.
2. What are kupffer cells?
3. Describe Medullary rays.
4. Draw the structure of the rod cell.
5. Name two fixatives.
6. Name the cells found in the pyloric gland.
7. Name the parts of the corpus striatum.
8. Give two examples for multipolar neurons.
9. Give the formation of the cerebro spinal fluid.
10. Name the types of RNA.

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[LF 118]

OCTOBER 2014

Sub. Code: 2091

**M.D. DEGREE EXAMINATION  
BRANCH XXIII – ANATOMY**

**PAPER III – HISTOLOGY, NEUROANATOMY AND MUSEUM  
TECHNIQUES**

*Q.P. Code :202091*

**Time : Three Hours**

**Maximum : 100 marks**

**I. Essay:**

**(2 x 10 = 20)**

1. Describe the structure and connections of corpus striatum.
2. Describe the microscopic anatomy of small intestine.

**II. Write short notes on:**

**(8 x 5 = 40)**

1. Osteoprogenitor cells.
2. Masson's trichrome stain.
3. Clearing agents.
4. Ventral tier of thalamic nuclei.
5. Microscopic anatomy of fallopian tube.
6. Supporting cells of Organ of Corti.
7. Taste bud.
8. Microscopic anatomy of Pars nervosa.

**III. Reasoning Out:**

**(4 x 5 = 20)**

**State whether each of the following is TRUE or FALSE and reason out.**

1. Tissues are kept under running tap water after staining with haematoxylin.
2. In lower motor neuron lesion of the facial nerve, the entire half of the face is affected.
3. The microtome knife is stropped before it is honed.
4. Cilia are present on the apical portion of the cells lining the villus.

**IV. Very Short Answers:**

**(10 x 2 = 20)**

1. Name the two layers of the periosteum.
2. What is Space of Disse?
3. What are corpora arenacea?
4. Name two basophils.
5. Name the cells found in the gastric gland.
6. Give two examples for bipolar neurons.
7. What is meant by progressive staining?
8. What is meant by gap junction?
9. Name two stains for myelinated nerve fibres.
10. What are Langerhan cells?

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