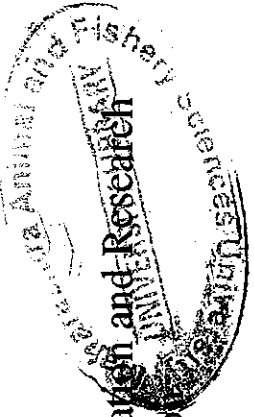


59 ②



Maharashtra Council of Agricultural Education and Research  
Semester-end Examination

**B. V. Sc. & A.H.**

SEMESTER : I  
COURSE NO. : ANT - 111  
CREDITS : 3(2+1)  
DAY & DATE : TUESDAY  
18-11-94

ACADEMIC YEAR : 1993-94

TITLE : Anatomy - I

TOTAL MARKS : 80

TIME : 12-00 to 14-00 hrs.

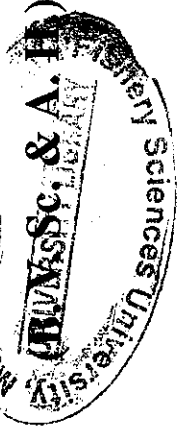
- Note :
- 1) Solve ANY FIVE questions from Section 'A'.
  - 2) All questions in Section 'B' are compulsory.
  - 3) All questions carry equal marks.
  - 4) Draw the diagrams wherever necessary.

**SECTION 'A'**

- Q. 1. Name the types of epithelia and describe their modifications in detail.
- Q. 2. Describe blood as a connective tissue.
- Q. 3. Give the histology of muscular tissue in visceral organs and state how it differs from that of skeletal muscle.
- Q. 4. Give the histology of simple stomach.
- Q. 5. Describe the histology of the kidney.
- Q. 6. Describe the structure of an adult cow's ovary.
- Q. 7. Draw a neatly labelled diagram of an Animal Cell.

**SECTION 'B'**

- Q. 8. Give the type of epithelium found in each of the following organs.
- |                    |                    |
|--------------------|--------------------|
| 1) Oesophagus      | 2) Tongue          |
| 3) Small intestine | 4) Large intestine |
| 5) Bronchus        | 6) Urinary bladder |
| 7) Salivary ducts  | 8) Uterus          |
| 9) Pleura          | 10) Heart          |



SEMESTER : I  
COURSE NO. : ANT - 111  
CREDITS : 3 (2+1)  
DAY & DATE : THURSDAY  
22-12-1994

ACADEMIC YEAR : 1994-95

TITLE : Anatomy - I

TIME : 12.00 to 14.00 hrs. TOTAL MARKS : 80

- Note :** 1) Question Nos. 1, 2 and 3 from Section 'A' are compulsory.  
2) Solve **ANY FIVE** questions from Section 'B'.  
3) All questions carry equal marks.  
4) Draw the diagrams wherever necessary.

**SECTION 'A'**

Q. 1. Fill in the blanks.

- 1) The trachea is lined by ..... epithelium.
- 2) Intercalated discs are present in .....
- 3) Nerve cells are located in ..... matter.
- 4) Example of fibrocartilage is .....
- 5) ..... forms the capsule of the tonsil.
- 6) Taste buds are associated with ..... and ..... papillae in tongue of cattle.
- 7) The unit structure of kidney is .....
- 8) Paneth cells are absent in crypts of Lieberkuhn of .....
- 9) The goblet cell is ..... gland.
- 10) Reticular tissue is present in .....

Q. 2. Give the location of the following.

- 1) Peyer's patches
- 2) Fingure like villi
- 3) Myoepithelial cells
- 4) Hassal's corpuscles
- 5) Islets of Langerhans
- 6) Brunner's gland
- 7) Sertoli cell
- 8) Brain sand
- 9) Zona fasciculata
- 10) Podocyte

Q. 3. Match the pairs.

'A'

- 1) White and red pulp
- 2) Neutrophil
- 3) Signet ring shaped cell
- 4) Endocrine gland
- 5) Apocrine gland
- 6) Gustatory cell
- 7) Corpus cavernosus
- 8) Ligamentum nuchae
- 9) Serous gland
- 10) Columns of morgoni

'B'

- 1) Fat cell
- 2) Adrenal
- 3) Tongue
- 4) Erectile tissue
- 5) Spleen
- 6) Elastic fiber
- 7) Mammary gland
- 8) Lobulated nucleus
- 9) Rectum
- 10) Parotid

**SECTION 'B'**

- Q. 4. Describe the histological structure of lymph node.
  - Q. 5. Discuss the microanatomical structure of ovary.
  - Q. 6. Describe the microscopic structure of liver.
  - Q. 7. Give the structure of animal cell.
  - Q. 8. Describe the histology of stomach.
  - Q. 9. Discuss the histological structure of kidney.
  - Q. 10. Describe the microanatomy of the trachea.
- 
-

Semester-end Report Examination of B.V.Sc. & A.H.,  
Academic year : 1994-95

Semester : I  
Course No. : ANP-111  
Credits : 3(2+1)  
Day & Date : Friday, 2.6.95  
Time : 9.00 to 11.00  
Title : Anatomy-I  
(Histology & Cytology)  
Total marks : 80

NOTE : 1) Solve any Five questions from Section 'A'.  
2) All questions in Section 'B' are compulsory  
3) Draw the diagrams wherever necessary.

Section 'A'

- Q.1. Describe the histological structure of Oesophagus.  
Q.2. Describe the histology of the testis.  
Q.3. Classify the epithelial tissue and describe the glandular epithelium in detail.  
Q.4. Give the microanatomy of the elastic artery.  
Q.5. Discuss the microscopic structure of pancreas.  
Q.6. Describe the histological structure of hyaline cartilage.  
Q.7. Give the microscopic structure of cardiac muscle and compare with that of smooth muscle and striated muscle.

Section 'B'

Q.8. Correct if necessary :

1. Outermost layer of oesophagus is called as serosa.
2. Trachea is internally lined by columnar ciliated epithelium.
3. The neurons are devoid of centriole.
4. Cortex and medulla are observed in spleen.
5. Enterochromoffin cells are observed in gastric glands.
6. Brunner's glands are present in submucosa of duodenum.
7. Tonsils are covered by connective tissue capsule.
8. Epithelial tissue presents network of blood capillaries.
9. Pancreas is exocrine as well as endocrine gland
10. The spinal canal and ventricles of brain are lined by astrocytes.

Q.9. Fill in the blanks :

1. Stratified squamous cornified epithelium is seen in \_\_\_\_\_
2. Presence of central arteriole in the white pulp is the characteristic feature of \_\_\_\_\_
3. Transverse striations in a striated muscle fiber are due to \_\_\_\_\_
4. Cytoplasmic processes of neuron are \_\_\_\_\_ and \_\_\_\_\_
5. Muscle fibers of the tongue are of \_\_\_\_\_ variety.
6. Urinary bladder shows \_\_\_\_\_ epithelium.
7. Largest lymphocyte is \_\_\_\_\_
8. \_\_\_\_\_ presents haversian system.
9. Von Kuffer's cell lines the sinusoid of \_\_\_\_\_
10. Cart wheel shaped nucleus present in \_\_\_\_\_

Q.10. Differentiate histologically by giving two points for each.

1. Spleen and Lymphnode
2. Striated and Cardiac muscle
3. Trachea and urinary bladder
4. Zleum and jejunum
5. Throid and parathyroid

MAHARASHTRA COUNCIL AGRICULTURAL EDUCATION & RESEARCH  
Semester End Examination of B.V.Sc. & A.H.

Semester : I  
Course No. : ANT-III  
Credits : 3 (2+1)  
Title : Anatomy - I  
(Histology & Cytology)

Day & Date : Tuesday  
14.11.1995  
Time : 15.00 to 17.00 hrs.  
Academic year : 1995-96  
Total Marks : 80.

- Note : 1) Solve any Five questions from Section 'A'  
2) All questions in Section 'B' are compulsory  
3) All questions carry equal marks  
✓ 4) Draw the diagrams wherever necessary

SECTION 'A'

- Q.1. Classify the connective tissue and describe the microscopic structure of bone.  
Q.2. Give the histological structure of uterus.  
Q.3. Describe the microanatomy of the small intestine.  
Q.4. Describe the histological structure of thymus.  
Q.5. Give the microscopic structure of the urinary bladder.  
Q.6. Discuss the histological structure of adrenal.  
Q.7. Describe the histology of lung.

SECTION 'B'

- Q.8. What do you know about the following :  
1. Serous demilune, (2) Juxta glomerular apparatus  
3. Node of Ranvier (4) Leydig cell  
4. Endometrial stroma.  
Q.9. Fill in the blanks :  
1. Peyer's patches are observed in \_\_\_\_\_  
of the mucous Membrane of ileum.  
2. The arrangement of muscle fiber in small intestine is \_\_\_\_\_ and \_\_\_\_\_  
3. Cytoplasm of neuron presents \_\_\_\_\_ bodies.  
4. Longitudinal striations in the muscle fiber are due to \_\_\_\_\_  
5. Neck mucoid cells are present in \_\_\_\_\_.  
6. Alveoli of lungs are lined by \_\_\_\_\_  
epithelium.  
7. Tendon consist of \_\_\_\_\_ fibers.  
8. Tunica media of the artery consist of \_\_\_\_\_.  
9. \_\_\_\_\_ cells are known as basket cell.  
10. Sebaceous glands are the \_\_\_\_\_ type gland.

Q.10. Give the location :

1. Interstitial cell
2. Glomeruli
3. Volkman canal
4. Keratohyaline granules
5. Multinucleated cell
6. Follicular arrangement of epithelium.
7. Pseudostratified columnar ciliated epithelium
8. Elastic cartilage
9. Centroacinar cell
10. Meissner's plexus.

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MAHARASHTRA COUNCIL OF AGRI-CULTURAL EDUCATION AND RESEARCH

Semester End Examination, B.V.Sc. & A.M.

Semster: I (Repeat)

Academic Session : 1995-96

Course No: ANT-111

Title : Anatomy-I

Credits : 2+1=3

Total marks : 80

Day & Date: Tuesday/4.6.1996

Time: 9.00 to 11.00 hrs.

- Note: 1. Attempt any five questions from section 'A'  
 2. All questions in section 'B' are compulsory.  
 3. Draw the diagrams wherever necessary.  
 4. All questions carry equal marks.

SECTION 'A'

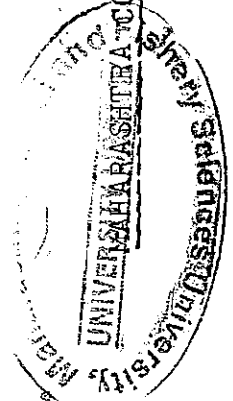
- Q.1 Give the method of classification of epithelium and describe the transitional epithelium.
- Q.2 Classify connective tissue and describe the structure of loose connective tissue.
- Q.3 Draw a diagram of a neuron and label all its parts.
- Q.4 Describe the histology of mammalian tongue.
- Q.5 Describe the structure of liver of pig.
- Q.6 Give the histology of a mature testis.
- Q.7 Describe the structure of pituitary gland.

SECTION 'B'

- Q.8 Name the type of epithelium present in each of the following.  
 1. Capillary 2. Skin 3. Trachea 4. Renal tubule  
 5. Renal pelvis 6. Lens capsule 7. Jejunum 8. Uterus  
 9. Lip 10. Gall bladder.
- Q.9 write down the chief function of each one of the following cells.  
 a) Fibroblast b) Osteocyte c) Plasma cells d) Chondrocyte  
 e) Chief cells f) Sertoli cells g) Erythrocyte  
 h) Pituicytes i) Goblet cell j) Schwann cell.
- Q.10 State if each one of the following. Statements, is TRUE or FALSE.  
 1. Mammalian RBC is an incomplete cell.  
 2. WBC's are present freely in connective tissues.  
 3. Every cartilage has many blood vessels in its matrix.  
 4. Osteocytes are totally separated from each others due to hard matrix.  
 5. Some nerve cells may be as long as 1 meter in length.  
 6. One fiber of skeletal muscle consists of many muscle cells.  
 7. All muscles have longitudinal striations.  
 8. Testis is an alveolar gland.  
 9. Villi in colon are very short.  
 10. Taste buds are found all over the tongue.

*1st year. 97-98*

*93*



COUNCIL OF AGRICULTURAL EDUCATION & RESEARCH  
ANNUAL BOARD EXAMINATION

F.Y.B.V.Sc. & A.H. (V.C.I.PATTERN)

SEMESTER : I&II

COURSE NO. 1) VAN/111  
2) VAN/121  
3) VAN/122  
CREDIT: 9 (5"4)

ACADEMIC YEAR 1997-98  
TITLE: ANATOMY PAPER-I

DAY & DATE *Monday 5/10/98 Time 10.00 to 13.30*

TIME: 3 Hrs. Total Marks: 125

NOTE: Use Seperate Answer book for each section.

SECTION 'A' (VAN-111) Marks: 50

Q.1: Describe in brief ( Any three) Marks 15

- a) Femur of Horse b) Mandible of dog
- c) Shouldert girdle of fowl d) Stifle joint of ox.

Q.2: Give the name , origin, insertion and action of the following group of muscles ( Any three) Marks 15

- A) Muscles of abdomen B) Muscles of arm region.
- C) Muscles of thorax D) Muscles of ear.

Q.3: Answer the following Marks 20.

- a) Identify the bone and species from the structure given below.
  - 1) uncinat process 2) Supratrochlear foramina
  - 3) Pygostyle 4) Spur 5) Trochanter tertious.
- b) State the name of the muscles for the following actions.
  - 1) Respiration 2) Dilation of nostrils 3) Mastication
  - 4) Forward and upward movement of neck
- c) State the location of:
  - 1) Synovial membrane 2) fovea dentis
  - 3) Crista galli 4) Extensor process
  - 5) Mylohyoid muscle.



//2//

- d) Give one example of each of the following :
- 1) Synchondrosis 2) Ball & socket joint
  - 3) Muscle of synsarcosis 4) pivot joint
  - 5) Syndesmosis.

SECTION 'B' VAN/121 Marks:50

Q.4: a) Describe the course & distribution of aorta or venacava in ox. Marks:15

b) Describe the spinal cord in ox. Marks:15

Q.5: Write short notes on (Any three) . Marks:15

1) Left Ventricle in bovines.

2) Brain stem. 3) brachial plexus

4) Refractive media of eye.

Q.6: a) Fill in the blanks: Marks: 10

1) There are total \_\_\_\_\_ pairs of cranial nerves.

2) The tongue is innervated by \_\_\_\_\_ & \_\_\_\_\_ nerves.

3) The mitral valve guards \_\_\_\_\_.

4) The falx cerebri is located at \_\_\_\_\_.

5) The pelvic organs are supplied by \_\_\_\_\_ artery.

6) The functional supply to liver is by \_\_\_\_\_ artery.

7) The \_\_\_\_\_ arterles supply the kidneys.

8) The foramen ovale connects the \_\_\_\_\_ with \_\_\_\_\_ in foetal

Heart.

b) Match column 'A' with 'B': Marks:10

'A'

Epicardium

S.A.node

Cisterna chyli

Organ of corâae

Aqueous humour

Lungs

~~Coronary Artery~~

Coronary Artery

Diaphragm

'B'

Hiatus aorticus.

Visceral pericardium.

Right atrium.

Pulmonary Veins

Musculophrenic nerve

Myocardium

Internal ear.

Oculomotor

34



//3//

SECTION : C'(VAN-122)

Marks: 25

Q.7: Give the gross anatomical features of (Any three) Marks:15

- 1) Stomach of bovines
- 2) Caecum of horse.
- 3) Kidneys in dog
- 4) Lungs in ox.
- 5) Udder of cow.

Q.8: Identify the species from the following:

- 1) Presence of orbital salivary gland
- 2) Spatula shaped tip of tongue
- 3) Socks shaped spleen
- 4) Fracheal or additional bronchus
- 5) Air sacs
- 6) Three rows of bands and sacculations on caecum
- 7) Presence of crop
- 8) Sectorial or carnessial tooth.
- 9) Absence of cowper's gland
- 10) Presence of ovulation fossa.

32



**MAHARASHTRA VETERINARY COLLEGES EXAMINATION BOARD, MUMBAI  
ANNUAL EXAMINATION**

**B.V.Sc. & A.H.**

<b>YEAR</b>	: First	<b>ACADEMIC YEAR</b>	: 1999-2000
<b>COURSE NO.</b>	: VAN-111	<b>SUBJECT/TITLE</b>	: Anatomy
<b>CREDITS</b>	: 2+2 = 4	<b>(Paper-I)</b>	
<b>DAY</b>	: Monday	<b>DATE</b>	: 14/8/2000
<b>TIME</b>	: Hrs. 10.00 to 12.00	<b>TOTAL MARKS</b>	: 50

**Note :** 1) Solve any three questions from Section 'A'.  
2) All questions carry equal marks.



**SECTION 'A'**

- Q. 1.** Name all the corresponding regions, bones & joints of hind limb and describe the tibia of Ox.
- Q. 2.** Enumerate the respiratory muscles and give their actions.
- Q. 3.** What is diarthrodial joint ? Describe its structure.
- Q. 4.** Describe the scapula of Ox and compare it with that of horse & dog.

**SECTION 'B'**

- Q. 5.** Identify the bone from the following features :-  
1. Trochanter tertius 2. Olecranon process 3. Odontoid process  
4. Coracoid process 5. Infraorbital foramen 6. Coronoid process  
7. Cornual process 8. Tuber spinae 9. Extensor process  
10. Supraspinous fossa.
- Q. 6.** Make ten meaningful anatomical terms by choosing most appropriate words from the following  
Foramen, Lacrimal, Interosseus, Xiphoid, Facies, Vertical, Trochanteric, bulla, occipital, costal, acromion, temporal, tubercle, process, ramus, crest, fossa, serrata, condyle, cartilage.

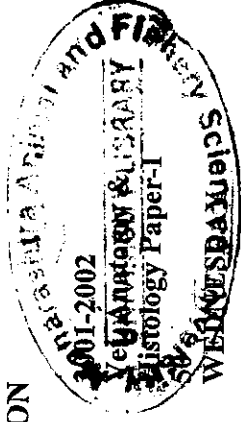
27  
23

MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY,  
NAGPUR

ANNUAL BOARD THEORY EXAMINATION

YEAR : FIRST  
COURSE NO. : VAN-111  
B.V.Sc. & A.H.  
ACADEMIC YEAR  
SUBJECT:

CREDITS : 2 + 2  
DATE : 9/10/2002  
TIME : 10-12HRS  
TOTAL MARKS  
DAY



NOTE : 1) Solve any THREE questions from Section - A  
2) Section-B is Compulsory.  
3) All question carry equal marks.  
4) Draw the suitable diagram wherever necessary.

COURSE NO: VAN-111 (Gross Anatomy) MARKS : 50

SECTION 'A'

- Q.1 Describe the proximal extremity of humerus of ox and compare it with that of horse, dog and fowl. (10)
- Q.2 Write the origin, insertion and action of muscles located on cranio-lateral aspect Of forearm and manus in ox. (10)
- Q.3 Describe the stifle joint of ox. (10)
- Q.4 Name the facial bones of ox. Compare the mandible of ox, horse and dog. (10)

SECTION 'B'

- Q.5 a) Name the following (5)
- 1) Muscles forming the flank.
  - 2) Type of sutures.
  - 3) Type of movements of diarthrodial joint.
  - 4) Subtalar muscles.
  - 5) Nasal conchae of fowl.
- b) Write down the number of the following. (5)
- 1) Sternal ribs in dog.
  - 2) Ribs in fowl.
  - 3) Carpal bones in ox.
  - 4) Interphalangeal articulations in horse.
  - 5) Foramina of diaphragm.
- Q.6 a) Define the following (5)
- 1) Linea alba.
  - 2) Trochlea
  - 3) Median Plane
  - 4) Extension movement
  - 5) Tendon.
- b) Rewrite the following sentences by doing necessary corrections if required. (5)
- 1) There are 8 cervical vertebrae in fowl.
  - 2) Hip joint is ginglymus type of joint.
  - 3) Infraspinatus muscle is lodged in supraspinatus fossa of scapula.
  - 4) Latissimus dorsi is the largest and longest muscle of the body.
  - 5) There are 7 sternbrae in the sternim of ox.

**MAHARASHTRA ANIMAL & FISHERY SCIENCES, UNIVERSITY**

**Compartment Theory Examination**

**B.V. Sc. & A.H. (VCI Pattern)**

Year : First  
Course No. : VAN - 111  
Credits : 2 + 2  
Subject : Vety. Anatomy & Histology Paper-I

Academic Year : 2001-2002

Day

Date

Time

Total Marks

Note : 1) Solve any three questions from Section 'A' of each course.

2) Section 'B' is compulsory.

3) All questions carry equal marks.

**COURSE NO. : VAN-111 (Gross Anatomy)**

**MARKS : 50**

**SECTION 'A'**

Note : Draw suitable diagram/s wherever necessary.

- Q.1 Describe the scapula of ox in detail and compare it with that of horse. (10)
- Q.2 Describe in detail the origin, disposition and attachments of supraspinous ligament of ox. (10)
- Q.3 Enumerate the muscles at the posterior aspect of tibia of horse. (10)
- Q.4 Describe the frontal bone of ox. (10)

**SECTION 'B'**

- Q.5 (A) Rewrite the sentence after making necessary corrections. (5)
- 1) There are two very strong patellar ligaments in horse attaching the patella to tibial tuberosity.
- 2) Femoropatellar articulation possesses an interposed semicircular cartilage.
- 3) The 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> are the atypical cervical vertebrae in case of ox.
- 4) There are three metatarsal bone in horses.
- 5) The digit of manus comprises three phalanges only in horses.

(B) Choose the correct answer (5)

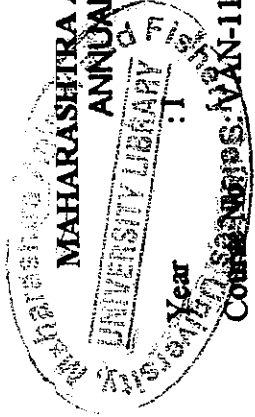
- a) The largest cranial bone in ox is Frontal/Parietal/Temporal/Occipital.
- b) The number of cervical vertebrae in a camel is 7 / 8 / 14 / 15.
- c) The foramen trisosseum is characteristically present in Ox / Horse / Dog / Fowl.
- d) The uncinat process is the peculiar feature of ribs of Ox / Horse / Dog / Fowl.
- e) The maxilla / premaxilla / hyoid / mandible forms the largest facial bone in ox.

Q. 6 (A) Enumerate the following. (5)

- (1) Extensors of carpus and digits in fore limb of ox.
- (2) Adductors of hind limb of ox.
- (3) Contents of femoral canal in horse.
- (4) Muscles of flank region of ox.
- (5) Attachments of the diaphragm of horse.

(B) Identify (5)

1. The bones forming chest wall of horse.
2. The bones forming back and lion of a bull.
3. The muscles which rotate the eye ball of dog.
4. The ligaments which hold the patella of horse.
5. The bones which form bony pelvis of cow.



MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR  
ANNUAL BOARD THEORY EXAMINATION, B. V. Sc. & A. H.  
(VCI - PATTERN)

Academic Year : 2002-2003  
Title : Gross Anatomy - I  
(Locomotor System)  
Max. Marks : 50  
Time : 10 to 12 hrs

Credits : 2+2= 4  
Day & Date : Thursday, 12/6/2003

Note : 1] Attempt any 3 questions from section 'A' 2] Section 'B' is compulsory.

SECTION - 'A'

- Q. 1 Write the names of the skull bones in Horse and describe in brief the mandible of horse with neat diagram. (10)
- Q.2. Classify the Diarthrodial joints based on structure and functional configuration with suitable examples of each. (10)
- Q.3. (a) Name the muscles of mastication. Describe in detail the masseter-muscle with it's origin, insertion and action. (5)
- (b) Name the origin, insertion and action for the following muscles. (5)
- 1. Trapezius
  - 2. Deltoides
  - 3. Biceps femoris.
  - 4. Psoas major
  - 5. Rectus abdominis
- Q.4. (a) Describe in brief the following bones with a neat diagram. (5)
- 1. Sacrum of dog.
  - 2. Sternum of fowl.
- (b) Describe the interneural and intercentral articulations of vertebral column in ox. (5)
- Q.5 (a) Write the differential feature of cervical vertebrae of ox and horse. (5)
- (b) List out the lateral and ventral neck region muscles of ox. (5)

SECTION-B

- Q.6 Choose the correct answer. (10)
- 1. The perforation meant for transmission of vessels, nerves etc. is known as  
(a) fossa (b) fovea (c) foramen (d) sinus
  - 2. Acromion process is absent in the scapula of  
(a) ox (b) horse (c) dog (d) sheep
  - 3. The longest bone in body of fowl is  
(a) femur (b) humerus (c) tibio-tarsus (d) sternum
  - 4. Supra trochlear foramen is seen in  
(a) humerus of dog (b) humerus of ox (c) humerus of horse (d) humerus of fowl
  - 5. The shoulder joint is  
(a) Arthroial (b) Enarthrodial (c) Ginglymus (d) Trochoid

- ✓ 6. Long elastic ligament extending from sacral spine to the occipital bone is  
(a) lig. flava (b) supraspinous lig. (c) ventral longitudinal lig. (d) radiate lig.
7. The articulation between 1st. and 2nd phalanx is  
(a) Pastern joint (b) coffin joint (c) knee joint (d) Fetlock joint
8. Long narrow muscle with two heads is  
(a) sartorius-m (b) pectineus-m (c) gracilis-m (d) adductor-m
9. Large unpaired muscle is  
(a) longus colli-m (b) Diaphragm (c) Rectus abdominis-m (d) Latissimus dorsi-m
10. The upper boundary of jugular furrow is formed by  
(a) Brachiocephalicus-m (b) Trapezius-m  
(c) Sternocephalicus-m (d) Omotraversarius-m

Q.7. (a) Give short definitions for the followings.

- (i). Trochlea:
- (ii). Sinus:
- (iii). Synsarcosis:
- (iv) Aponeurosis:
- (v) Fascia:

(5)

(b) Give two examples for each of the following

- (i) Visceral bones
- (ii) Ill developed long bones:
- (iii) Ginglymus joints:
- (iv) Amphiarthrodial joints:
- (v) Inspiratory muscles:

(5)

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4

**MAL & FISHERY SCIENCES UNIVERSITY, NAGPUR**  
**JARD THEORY EXAMINATION, B. V. Sc. & A. H.**

2 marks



Academic Year : 2003-2004  
Subject : Veterinary Anatomy & Histology (I)  
Total Marks : 50  
Time : 11.00 to 13.00 hrs.

Course No. **VAN-111**  
Credits : 2+2  
Day & Date: **Thursday, 08/07/2004**

**Note :** 1) Solve any Three questions from Section 'A'  
2) Questions from Section 'B' are compulsory.  
3) All questions carry equal marks.

**VAN-111 Gross Anatomy-1 (Locomotor system) (50 Marks)**

**Section-A**

- Q1. Describe in detail with the help of a diagram the Os-coxae of cattle and write the sexual differences in the pelvis. 10M
- Q2. Mention the vertebral formula of Ox, Horse, Dog and Fowl. Describe in detail the sacrum of Ox. 10M
- Q3. Describe in detail with the help of a diagram the stifle joint of Ox 10M
- Q4. List out the muscles of the forearm region (Extensors and flexors). Describe in detail the origin, insertion, action, blood and nerve supply of the Extensors of the forearm region 10M
- Q5. a) Name the bones forming the skull. Describe in detail the temporal bone 5M  
b) Mention the muscles of respiration. Describe in detail the diaphragm 5M

**Section-B**

- Q6. Write briefly in one line or few words about the following 10M
  - 1. sagittal plane:
  - 2. Sutura:
  - 3. Flat bone
  - 4. Condyle
  - 5. Sesamoid
  - 6. Bursae
  - 7. Adduction
  - 8. Amphiarthroses
  - 9. Gomphosis
  - 10. Jugular furrow

- Q7. (A) Give one or two examples for the following 5M
  - 1. Nevicular bone
  - 2. Enarthroses
  - 3. Largest sinus of skull
  - 4. Muscles with three heads
  - 5. Muscles with aponeurotic sheaths



(B)

Choose the correct answer and underline it

1. Number of carpal bones present in Ox are  
a. 2      b. 4      c. 6      d. 12
2. The common tendon of all the abdominal muscles  
a. Tendo-archillis      b. Prepubic tendon  
c. Aponeuroses      d. none of the above
3. Example of an "atypical" vertebra is  
a. sacrum      b. 7<sup>th</sup> cervical      c. axis      d. atlas
4. Mandibular symphysis is absent in  
a. horse      b. Ox      c. Dog      d. none of the above
5. The following muscle is a sublumbar muscle  
a. Rectus abdominus      b. Psoas major  
c. Teres major      d. Teres minor

12  
MAHARASHTRA ANIMAL SCIENCES UNIVERSITY, NAGPUR  
ANNUAL THEORY EXAMINATION B. V. Sc. & A. H.

Year : I  
Course No. : VAN-111  
Credits : 2+2 = 4  
Day & Date : Monday, 13/07/2009  
Subject : Veterinary Anatomy & Histology - (I)  
Academic Year : 2008-2009  
Marks : 50  
Time : 10.00 to 12.00 hrs.

- Note : 1) Solve Any Three questions from Section - A.  
2) All questions from Section - B are compulsory.  
3) All questions carry equal marks.  
4) Draw the diagram wherever necessary.

VAN - 111

Osteology Arthrology and Myology

(50Marks)

Section 'A'

- Q.1 Describe the humerus of ox and compare it with that of horse and dog. 10  
Q.2 Name the cranial bones of ox and describe the mandible in detail. 10  
Q.3 (a) Classify the diarthrodial joints. 05  
(b) Describe the shoulder girdle bones in Fowl. 05  
Q.4 Name any five muscles of thorax and describe the diaphragm of ox in detail. 10  
Q.5 (a) Compare pelvic girdle of cow and bull. 05  
(b) Write short note on ligamentum nuchae. 05

Section 'B'

- Q.6 Write the most appropriate answer from the options given. 10  
(a) Acromion process is absent in the scapula of  
i) Ox ii) Horse iii) Dog  
(b) Sustentaculum tali is a feature found in  
i) Metatarsus ii) Fibular tarsal iii) Ilium  
(c) Seven lumbar vertebrae are found in  
i) Ox ii) Horse iii) Dog  
(d) Muscle of hind limb  
i) Popliteus ii) Zygomaticus iii) Coccygeus  
(e) Joint showing rotational movement  
i) Occipitoatlantal ii) Atlantoaxial iii) Elbow  
(f) Infraorbital foramen is present on \_\_\_\_\_ bone in ox.  
i) Frontal ii) Lacrimal iii) Maxilla  
(g) Total pairs of ribs in horse  
i) 18 ii) 8 iii) 9  
(h) Bony shoulder girdle is complete in  
i) Ox ii) Dog iii) Fowl

- (f) These bones act as weight bearing columns  
i) Flat            ii) Long            iii) Short
- (g) This muscle is absent in the lateral abdominal wall  
i) Rectus abdominis            ii) Transversus abdominis  
iii) Obliquus abdominis externus

Q.7

(A) Answer in one word.

05

- i) Structure formed by fusion of last few caudal vertebrae in fowl.
- ii) Name the point of origin of biceps brachii muscle in Ox.
- iii) Name the joint formed between the roots of the teeth and alveolar sockets.
- iv) Name the bone of Ox which has popliteal notch.
- v) Species with three metacarpal bones in each limb.

(B) Do as directed.

05

- i) Write names of any two muscles of arm.
- ii) Name any two muscles of mastication.
- iii) Write the vertebral formula of fowl.
- iv) Name two digital joints.
- v) Name the depression on humerus which occupies brachialis muscle.

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11

**MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR**  
**COMPARTMENT ANNUAL THEORY EXAMINATION, B. V. Sc. & A. H.**

Year : I  
Course No. : VAN-111  
Credits : 2+2 = 4  
Day & Date : Monday, 24/08/2009

Academic Year : 2008-2009  
Subject Paper Title : Veterinary Anatomy & Histology (I)  
Total Marks : 50  
Time : 10.00 to 12.00 hrs.

- Note:** 1) Solve Any Three questions from Section - A.  
2) All questions from Section - B are compulsory.  
3) All questions carry equal marks.  
4) Draw well labeled diagram wherever necessary.

**VAN-111**

**Osteology, Arthrology and Myology**

**(50 Marks)**

**Section-A**

- Q. 1 Define and classify skeleton. Explain in detail the classification of bones giving examples of each type. (10)
- Q. 2 Explain the humerus of ox and differentiate it from horse, dog and fowl. (10)
- Q. 3 Define and classify joints. Explain the structure of diarthrodial joint with a well labeled diagram. (10)
- Q. 4 Explain the os coxae of ox and differentiate it from horse and dog. (10)
- Q. 5 Write in detail about the muscles of abdomen along with its origin, insertion and actions. (10)

**Section-B**

- Q. 6 Choose the most appropriate answer from the options given. (10)
- 1) How many carpal bones are present in horse?  
a) Seven  
b) Eight  
c) Six  
d) Absent
- 2) Navicular bone is :  
a) Proximal sesamoid  
b) Distal sesamoid  
c) Both of the above  
d) None of the above
- 3) Among the following facial bones which one is not paired?  
a) Maxilla  
b) Pre-maxilla  
c) Palatine  
d) Vomer
- 4) The two tibial condyles are posteriorly separated by :  
a) Popliteal notch  
b) Sulcus muscularis  
c) Tibial tuberosity  
d) Intercondyloid eminence
- 5) Sacrum of dog is formed by fusion of  
a) Two sacral vertebrae  
b) Three sacral vertebrae  
c) Four sacral vertebrae  
d) Five sacral vertebrae
- 6) Strong band of non-elastic fibrous tissue which helps in binding of joints.  
a) Ligament  
b) Tendon  
c) Bursa  
d) Meniscii

**PTO**

- 7) Sutures are type of :
- a) Movable joint
  - c) Diarthrodial joint
  - b) Synarthrodial joint
  - d) Amphiarthrodial joint
- 8) Which metacarpal bone forms large metacarpal bone of horse?
- a) First metacarpal
  - c) Third metacarpal
  - b) Second metacarpal
  - d) Fourth metacarpal
- 9) Sternum is boat shaped in:
- a) Dog
  - c) Ox
  - b) Horse
  - d) Sheep
- 10) The bone destroying cells are called:
- a) Osteocytes
  - c) Osteoclasts
  - b) Osteoblasts
  - d) Fibroblasts

Q. 7 Rewrite the following sentences after making the necessary corrections, if required. (10)

- 1) Malar bone is also known as lacrimal bone.
- 2) Tuberosity is a large, articular projection.
- 3) Ischial tuberosity is trifold in dog.
- 4) Lateral malleolus is a separate bone in horse.
- 5) The orbit is incomplete in skull of dog.
- 6) Supratrochlear foramen connects Radial and Olecranon fossae in horse.
- 7) Tuber sacrale is the lateral angle of Ilium forms the highest point of axial skeleton.
- 8) The largest sesamoid bone is present in fore limb.
- 9) Dewclaws are rudimentary digits.
- 10) Ulna is larger than radius in fowl.

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15

**MAHARASHTRA ANIMAL & FISHERY SCIENCES UNIVERSITY, NAGPUR**  
**COMPARTMENT ANNUAL THEORY EXAMINATION, B. V. Sc. & A. H.**

Year : I  
Course No. : VAN-121, 122  
Credits : 2+1 = 3, 1+1 = 2  
Day & Date : Tuesday, 25/08/2009

Academic Year : 2008-09  
Subject/Paper Title : Veterinary Anatomy & Histology (II)  
Total Marks : 50+25 = 75  
Time : 10:00 to 13.00 hrs.

**Note :** 1) Use separate answer book for each course.

- 2) Solve **Any Three questions** from **Section - A** of each course.  
3) **All questions** from **Section - B** of each course are compulsory.  
4) All questions carry equal marks.  
5) Draw well labeled diagram wherever necessary.

**VAN-121**

**Angiology, Neurology & Anesthesiology**

**50 Marks**

**Section-A**

- Q. 1 Explain the internal structure of heart of ox with a well labelled diagram. (10)
- Q. 2 Describe the blood supply to hind limb of ox. (10)
- Q. 3 What is brachial plexus? Discuss its branches. (10)
- Q. 4 List the name and nature (sensory/motor/mixed) of cranial nerves of ox in order. Describe the X cranial nerve. (10)
- Q. 5 Describe the tunics of eyeball with the help of well labelled diagram. (10)

**Section-B**

- Q. 6 Choose the most appropriate answer from the options given. (10)
- 1) The heart is extended in the abdomen and lies between lobes of liver in:  
a) Horse  
b) Ox  
c) Dog  
d) Fowl
- 2) The round ligament of bladder is remnant of:  
a) Umbilical artery  
c) Umbilical vein
- 3) The duramatter is separated from periosteum of spinal canal by:  
a) Subdural space  
c) Epidural space
- 4) The fossa ovalis is a remnant of:  
a) Posterior vena cava  
c) Pulmonary vein
- 5) The os cordis is present in:  
a) Ox  
c) Dog
- 6) The largest and longest lymph duct of the body is:  
a) Tracheal lymph duct  
c) Right lymphatic duct
- 7) The two halves of the cerebrum are connected by white commissural mass called:  
a) Falx cerebri  
c) Corpus callosum
- 8) The omasoabomasal artery is branch of:  
a) Renal artery  
c) Cranial mesenteric artery
- 9) Which is not a part of hind brain?  
a) Cerebellum  
c) Thalamus
- 10) Phreno-pericardiac ligament is present in:  
a) Ox  
b) Horse
- b) Middle uterine artery  
d) Gluteal artery
- b) Subarachnoid space  
d) None of the above
- b) Anterior vena cava  
d) Foramen ovale
- b) Horse  
d) Fowl
- b) Thoracic duct  
d) Cisterna chyli
- b) Tentorium cerebelli  
d) Aqueduct of Sylvius
- b) Coeliac artery  
d) Internal spermatic artery
- b) Pons  
d) Medulla oblongata
- b) Horse

Q. 7 Write the suitable term against each of the following: (10)

- 1) \_\_\_\_\_ Junction where cornea and sclera meet.
- 2) \_\_\_\_\_ Blood vessels supplying to the walls of blood vessel.
- 3) \_\_\_\_\_ Enlargement at origin of aorta.
- 4) \_\_\_\_\_ Structural and functional unit of nervous system.
- 5) \_\_\_\_\_ Caudal tapering end of spinal cord in ox.
- 6) \_\_\_\_\_ Communication between third ventricle and lateral ventricle.
- 7) \_\_\_\_\_ The fold of duramatter which forms roof over the pituitary.
- 8) \_\_\_\_\_ Sac formed at level of 2<sup>nd</sup> & 3<sup>rd</sup> lumbar vertebra by union of lumbar and gastrointestinal lymphatic trunks.
- 9) \_\_\_\_\_ Vascular circle at interpeduncular fossa at base of brain in subarachnoid space.
- 10) \_\_\_\_\_ Aggregation of neurons outside central nervous system.

VAN-122

**Splanchnology**

**25 Marks**

**Section-A**

- Q. 1 Describe the structure of rumen of ox. (05)
- Q. 2 Describe in detail about tongue of horse. (05)
- Q. 3 Explain the structure of lungs of ox. (05)
- Q. 4 Draw a well labelled diagram of the female genital system of cow. (05)
- Q. 5 a) Describe the right kidney of ox. (2.5)  
b) Explain the male accessory sex glands of ox. (2.5)

**Section-B**

- Q. 6 Choose the most appropriate answer from the options given. (10)  
1) 'V' shaped uterine horns are present in :  
a) Ox                      b) Pig                      c) Horse                      d) Dog
- 2) Syrinx is present in :  
a) Ox                      b) Horse                      c) Dog                      d) Fowl
- 3) The serous fold that attaches intestine to dorsal wall of abdomen :  
a) Mesentery              b) Omentum              c) Ligament              d) Fascia
- 4) Testicles are oriented parallel to long axis of body in :  
a) Ox                      b) Dog                      c) Pig                      d) Horse
- 5) Round ligament of liver is remnant of  
a) Umbilical vein        b) Umbilical cord        c) Umbilical artery        d) Umbilical fissure
- 6) Guttural pouch is present in :  
a) Horse                  b) Ox                      c) Dog                      d) Fowl
- 7) The oesophageal diverticulum in poultry is called  
a) Proventriculus        b) Gizzard                  c) Crop                      d) Cloaca
- 8) Number of lobes in poultry liver are :  
a) Three                  b) Five                      c) Six                      d) Two
- 9) Carnassial / sectorial teeth are present in :  
a) Horse                  b) Ox                      c) Dog                      d) Pig
- 10) The ovary is completely enclosed by ovarian bursa in :  
a) Mare                    b) Bitch                    c) Sow                      d) Cow

**MAHARASHTRA ANIMAL & FISHERY SCIENCES UNIVERSITY, NAGPUR**  
**ANNUAL THEORY EXAMINATION, B. V. Sc. & A. H.**

8



Year : I (Old)  
Course No. : VAN-111  
Credits : 2+2 = 4  
Day & Date : Monday, 07/06/2010  
Academic Year : 2009-2010  
Subject : Veterinary Anatomy & Histology - (I)  
Total Marks : 50  
Time : 09.00 to 11.00 hrs.

- Note:** 1) Solve Any Three Questions from Section - 'A'.  
2) All Questions from Section - 'B' are compulsory.  
3) All Questions Carry Equal Marks.  
4) Draw the diagram wherever necessary.

*Acad. copy*

**VAN-111**

**Osteology Arthrology and Myology**

**50 Marks**

**Section - 'A'**

- Q.1 Describe the sex differences in the bony pelvis of male and female animals. (10)  
Q.2 Describe the types and movements of diarthroidal joints (10)  
Q.3 Describe the origin, insertion and action of abdominal muscles. (10)  
Q.4 Discuss the followings:  
a) Ribs (fowl) b) Sacrum (Horse) (10)  
Q.5 Write short notes on:  
a) Turbinates (Ox) b) Sternum (Fowl) (10)

**Section - 'B'**

- Q.6 A) Choose the most appropriate answer from the options given : (05)  
1) The smallest head of deep digital flexor of fore arm and Manus is  
a) Radial b) Ulnar c) Humeral d) None of these  
2) Pygostyle is found in the vertebrae of  
a) Lumbar region b) Thoracic region c) Coccygeal region d) Sacral region  
3) Muscles are named on the basis of  
a) Structure b) Action c) Attachment d) All of these  
4) Nature of ligamentum nuchae is  
a) Fibrous b) Reticular c) Elastic d) Tendinous  
5) Menisci are present in  
a) Elbow joint b) Knee joint c) Fetlock d) Stifle (05)  
B) Correct and rewrite the statement, if needed.  
1) Haemal process are found in lumbar vertebrae  
2) Bicipital groove is divided in dog for the passage of ligament of brachialis muscle  
3) Canines is the only species in which the pelvic cavity is incomplete ventrally.  
4) The longest muscle of the body of animal is Serratus dorsalis.  
5) Interosseus ligament is present within the joint capsule.

- Q.7 A) Define the followings: (05)  
1) Crest 2) Biceps 3) Digastricus  
4) Epicondyle 5) Long bone  
B) Name the bone for the following structure. (05)  
1) Odontoid process  
2) Anconeus process  
3) Trochlea  
4) Fascis serrata  
5) Supra-trochlear foramen

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**MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR**  
**Annual Theory Examination of B. V. Sc. & Co. H. Degree Course**

Year : I (New Course)  
 Course No. : VAN-111, 121  
 Credits : 1+2 = 3, 2+2 = 4  
 Day & Date : Monday, 05/07/2010

Academic Year : 2009-2010

Paper Type : Veterinary Anatomy - (I)

Time : 30+30 = 60

Time : 10.00 to 13.00 hrs.

**Library**

**Note:** 1) Use Separate Answer Book for each course.

2) Solve Any Three Questions from Section - 'A' of each course.

3) All Questions from Section - 'B' of each course are compulsory.

4) Draw neat & well labeled diagram wherever necessary.

**VAN-111**

**Veterinary Gross Anatomy - I**

**(Osteology, Arthrology & Biomechanics)**

**30 Marks**

**Section - 'A'**

- Q.1 A) Write down the differences in male and female pelvic bones in cattle. (02)  
 B) Describe the ligamentum nuchae. (02)
- Q.2 A) Describe the mandible of ox. (02)  
 B) Differentiate the radius-ulna of ox and horse (02)
- Q.3 A) Describe sacrum of ox and differentiate it with dog. (02)  
 B) Describe the trunk construction of animals in terms of parts forming the bowstring or arched bridges. (02)
- Q.4 Classify the joints and describe the stifle joint of ox. (04)
- Q.5 Describe the tibia-fibula of ox and compare with horse and dog. (04)

**Section - 'B'**

- Q.6 Do as directed. (06)
- a) Write the vertebral formula of ox  
 b) Name the carpal bones of dog  
 c) Name the bones of wing of fowl.  
 d) Name four types of fibrous joints.  
 e) Name single cranial bones of ox  
 f) Name four features of atlas.
- Q.7 Choose the correct answers from the multiple options given: (06)
- 1) Number of sternbrae in ox  
 a) Five  
 b) Seven
- 2) Pairs of ribs in fowl  
 a) 18  
 b) 7
- 3) Hinge joint  
 a) Shoulder  
 b) Fetlock
- 4) Trochlear distal extremity of tibia  
 a) Ox  
 b) Horse
- 5) Fastest gait in animals  
 a) Gallop  
 b) Trot
- 6) The fore limbs bears maximum body weight  
 a) Ox  
 b) Horse
- 7) None of these  
 a) Dog  
 b) Cat  
 c) Fowl  
 d) None of these
- 8) State True or False and rewrite the false sentence after making necessary correction, if required. (03)
- 1) Foramen magnum transmits trigeminal nerve  
 2) Hip joint has an accessory ligament in horse  
 3) There is movement between radius and ulna in pig.
- B) Define with one example. (03)
- a) Epicondyle  
 b) Amnhiarthrosis

Section - 'A'

- Q.1. A) Describe the supply of ulnar nerve in ox. (02)  
B) Describe the diaphragm. (02)
- Q.2 A) Describe the blood supply of caudal mesenteric artery. (02)  
B) What is jugular furrow? (02)
- Q.3 A) Describe the lacrimal apparatus. (02)  
B) Describe the spinal meninges. (02)
- Q.4 Name the sensory cranial nerves and describe the supply of facial nerve. (04)
- Q.5 Describe the gross anatomy of heart of ox and horse. Write the features of interior of right atrium (04)

Section – 'B'

- Q.6 Choose the correct answer from the options given: (06)
- 1) Cranial nerve associated with organ of corti  
a) VII  
b) VIII  
c) V  
d) X
- 2) Muscle of forearm  
a) Biceps femoris  
b) Brachialis  
c) Extensor carpi radialis  
d) Brachiocephalicus
- 3) Middle uterine artery is the branch of  
a) Abdominal aorta  
b) Internal iliac artery  
c) Deep femoral  
d) External iliac artery
- 4) Expiratory muscle  
a) Internal intercostal  
b) External intercostals  
c) Rectus thoracis  
d) Rectus abdominis
- 5) Vein draining blood from thoracic and abdominal wall  
a) Cephalic  
b) Vena azygous  
c) Common iliac  
d) Subcutaneous abdominal
- 6) Foramen joining lateral and third cerebral ventricles  
a) Lushka  
b) Megendie  
c) Monro  
d) Magnum
- 7) The branch of vagus nerve  
a) Ophthalmic  
b) Recurrent laryngeal  
c) Pudendal  
d) Pudic
- 8) Artery supplying mammary gland  
a) External iliac  
b) Ilio-lumbar  
c) Deep femoral  
d) Internal iliac
- 9) Ganglion associated with glassophalangeal nerve  
a) Otic  
b) Pterygo palatine  
c) Ciliary  
d) Gasserian
- 10) Innermost abdominal muscle  
a) External oblique  
b) Internal oblique  
c) Rectus abdominis  
d) Transversus abdominis
- 11) Frog is found in the hoof of  
a) Ox  
b) Horse  
c) Pig  
d) Dog
- 12) Largest nerve of lumbar plexus  
a) Femoral  
b) Ischiatic  
c) Cranial gluteal  
d) Caudal gluteal



Q.7 Answer the following in one word(s):

(06)

- 1) Longest and largest muscle of the body.
- 2) Cranial nerve having attachment over the dorsal aspect of the brainstem.
- 3) The nerve supplying to lattissimus dorsi
- 4) The cranial nerve which gives sense of vision.
- 5) Main lymphatic trunk of the body.
- 6) Stirrup shaped auditory ossicle.
- 7) The nerve supplying to ocular muscle except lateral rectus, retractor bulbi and dorsal oblique.
- 8) White fibrous band formed by the aponeurosis of the abdominal muscles..
- 9) Arterial network supplying the brain present around the sella turcica.
- 10) Artery which terminates into cranial and caudal tibial arteries.
- 11) Larger coronary artery among the two.
- 12) Caudal end of the spinal cord.

Q.8 A) Answer the following in one sentence.

(03)

- a) Space between spinal duramater and vertebral canal.
- b) The nerve forming the part of carotid sheath.
- c) The vein preferred for venipuncture in dog.
- d) The artery used for palpation to record the pulse rate in tail region.
- e) The lymph node of forelimb, commonly palpated during clinical examination of ox.
- f) The muscle surrounding most of the shaft of femur except its caudal aspect.

B) Match the pairs:

(03)

**Group 'A'**

- 1) Horn
- 2) Falx cerebri
- 3) Left ventricle
- 4) Brachialis muscle
- 5) Avascular structure
- 6) Femoral canal

**Group 'B'**

- a) Saphenous nerve
- b) Cornual nerve
- c) Cornea
- d) Dura mater
- e) Apex of heart
- f) Musculospiral groove

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**MAHARASHTRA ANIMAL & FISHERY SCIENCES UNIVERSITY, NAGPUR**  
**ANNUAL THEORY EXAMINATION, B.V.Sc. & A.H.**

Year : I (Old)      Academic Year : 2010-2011  
 Course No. : VAN-111      : Veterinary Anatomy & Histology -I  
 Credits : 2+2=4      : 50  
 Day & Date : Monday, 06/06/2011      : 09.00 to 11.00 hrs.

**Note:** 1) Solve Any Three questions from Section - 'A'.  
 2) All questions from Section - 'B' are compulsory.  
 3) Draw well-labelled diagram wherever necessary.

VAN-111 (2+2=4)

Gross Anatomy I

Marks 50

**SECTION - 'A'**

- Q. 1 Write short notes on (Any Four) (10)
- Abdominal muscles
  - Mandible
  - Typical vertebrae
  - Ligamentum nuchae
  - Straight patellar ligaments
- Q. 2 Name the types of fibrous or immovable joints. Write in brief the formation of fetlock joint. (10)
- Q. 3 Draw and Describe pelvic bone of ox and compare it with horse. (10)
- Q. 4 Describe the femur of ox and compare it with horse. (10)
- Q. 5 Describe in detail about the extensor muscles of forearm and manus region. (10)

**SECTION - 'B'**

- Q. 6 Choose the most correct answer. (10)
- The total number of tarsal bones is 7 in.....  
 1) Dog      2) Ox  
 3) Horse      4) Goat
  - Fibula extends to the whole length of tibia in.....  
 1) Horse      2) Ox  
 3) Sheep      4) Fowl
  - The lumber vertebrae are seven in .....  
 1) Dog      2) Ox  
 3) Horse      4) Goat
  - Third trochanter present in .....  
 1) Pig      2) Ox  
 3) Horse      4) Goat
  - Uncinate process is present in .....  
 1) Pig      2) Ox  
 3) Horse      4) Fowl
  - Superficial gluteus is found in .....  
 1) Pig      2) Ox  
 3) Horse      4) Goat
  - Clavicle some time present in .....  
 1) Dog      2) Ox  
 3) Horse      4) Goat
  - Two proximal and one distal sesamoid bones of one fore limb is found in .....  
 1) Dog      2) Ox  
 3) Horse      4) Goat

- i) Supratrochlear foramen is found in .....
- 1) Dog
  - 2) Ox
  - 3) Horse
  - 4) Goat
- j) Styloid process of ulna is more extended than radius in case of .....
- 1) Dog
  - 2) Ox
  - 3) Horse
  - 4) Goat

Q. 7 Correct the statements by replacing the underlined word(s) only, if necessary. (10)

- a) Maxilla forms the anterior boundary of cranial cavity
- b) Costal facets are present in 6<sup>th</sup> cervical vertebrae
- c) Latissimus dorsi is the muscle of abdomen
- d) Tensor fascia antibrachii is found in thigh region
- e) Mental foramen is present at the medial surface of mandible
- f) 2 pairs of ribs are asternal in horse
- g) Vomer is a paired bone of the skull
- h) Psoas tubercle is less developed in ox
- i) Sacrum is formed by three segments in horse
- j) Sella turcica is found in basi occipital bone

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MAHARASHTRA ANIMAL & FISHERY SCIENCES UNIVERSITY, NAGPUR  
ANNUAL THEORY EXAMINATION, B.V.Sc. & A.H.

Year : I (New Course)  
Course No. : VAN-111, 121  
Credits : 1+2= 3, 2+2 = 4  
Day & Date : Monday, 25/07/2011

Academic Year : 2010-2011  
Subject/Paper Title : Veterinary Anatomy-I  
Total Marks : 30 + 30  
Time : 10.00 to 13.00 hrs.

- Note :**
- 1) Use Separate Answer Book for each course.
  - 2) Solve Any Three questions from Section – 'A' of each course.
  - 3) All questions from Section – 'B' of each course are compulsory.
  - 4) Draw neat and well labeled diagram wherever necessary.

**VAN-111 (1+2)**

**Veterinary Gross Anatomy-I**

**(Marks - 30)**

**SECTION - 'A'**

- Q. 1 A) Describe in brief the femur of the ox (02)  
B) Explain the structure of ligamentum nuchae of the ox (02)
- Q. 2 A) Describe in brief the scapula of the ox. (02)  
B) Explain the formation of stifle joint. (02)
- Q. 3 A) Explain the structure of typical vertebra. (02)  
B) Describe the sternum of the fowl in detail. (02)
- Q. 4 Explain in detail the formation of the bony thoracic cavity in ox. (04)
- Q. 5 Explain in detail the stay apparatus along with suspensory ligament. (04)

**SECTION - 'B'**

- Q. 6 Define / explain the following: (06)

- Synsarcosis
- Pygostyle
- Biomechanics
- Diploe
- Uncinate process
- Splanchnic bones
- Circumduction
- Foramina triosseum
- Ossification
- Condyle
- Trochlea
- Spine

- Q. 7 Name the following.

(06)

- Facial bones of the dog
- Regions and joints of the fore limb of horse
- Vertebral formula of the fowl
- Classes of bones with example
- Vertebral formula of the horse
- Non articular elevations
- Types of movements in joints
- Types of movable joints
- Tarsal bones of ox
- Types of sutures
- Bones of pectoral girdle of fowl
- Para nasal sinuses

- Q. 8 A) Choose the correct answer from the choices given below. (03)
- i) Supra-trochlear foramen is present in the Humerus of .....
    - a) Cattle
    - b) Horse
    - c) Dog
    - d) Pig
  - ii) Mammillary process is characteristic feature of .....
    - a) Cervical vertebra
    - b) Lumbar vertebra
    - c) Thoracic vertebra
    - d) Sacral vertebra
  - iii) Oblique facets are present in distal extremity of radius of .....
    - a) Ox
    - b) Horse
    - c) Dog
    - d) Fowl
  - iv) The spine divides the lateral surface of scapula in the ratio of 1:1 in .....
    - a) Ox
    - b) Horse
    - c) Dog
    - d) Fowl
  - v) Sacrum of dog is the fusion of how many sacral vertebrae?
    - a) Two
    - b) Three
    - c) Four
    - d) Five
  - vi) Styloid process is present in .....
    - a) Radius
    - b) Ulna
    - c) Patella
    - d) Occipital

(B) Give one word answer to the following. (03)

- i) The external layer of a bone is known as \_\_\_\_\_
- ii) Give one example of visceral bones in dog \_\_\_\_\_
- iii) Total number of carpal bones in ox is \_\_\_\_\_
- iv) Number of sternbrae in ox is \_\_\_\_\_
- v) The orbit is incomplete in \_\_\_\_\_
- vi) Diaphragm is rudimentary in \_\_\_\_\_

VAN-121 (2+2)

Veterinary Gross Anatomy-II

(Marks - 30)

SECTION - 'A'

- Q. 1 A) Describe in brief about the fibrous tunic of eyeball. (02)
- B) Explain in brief the structure of middle ear of the horse. (02)
- Q. 2 A) Describe in brief the muscles of pectoral girdle. (02)
- B) Describe in brief the muscles of abdomen. (02)
- Q. 3 A) Explain the formation and branches of the brachial plexus. (02)
- B) Explain in brief the Rete Mirabile Cerebrale. (02)
- Q. 4 Describe the spinal cord and its meninges, Differentiate between the Cranial and spinal meninges. (04)
- Q. 5 Describe in detail the internal structure of Right auricle and Ventricle of the heart. (04)
- Q. 6 Define / explain the following: (06)
  - i) Ganglion
  - ii) Falx cerebri

SECTION - 'B'

- v) Chest nut
- vi) Nictitating membrane
- vii) Cauda equine
- viii) Synapse
- ix) Cisterna chilia
- x) Pericardium
- xi) Node of Ranvier
- xii) Ventricles of brain

Q. 7 Name the following. (06)

- i) Sensory cranial nerves
- ii) Contents of the jugular furrow
- iii) Muscles of the eye ball
- iv) Intra thoracic branches of brachial artery
- v) Ligaments of pericardium in ox and dog
- vi) Branches of celiac axis
- vii) Muscles of the tail
- viii) Openings of the diaphragm
- ix) Foetal shunts
- x) Branches of lumbo-sacral plexus
- xi) Muscles of the ear
- xii) Extensor muscle of the forelimb

Q. 8 A) Choose the correct answer from the choices given below. (03)

- i) Thin white membranous partition between lateral ventricles .....
  - a) Tapetum lucidum
  - b) Septum lucidum
  - c) Diaphragm
  - d) None
- ii) The Subcutaneous nerve of the fore limb is .....
  - a) Ulnar
  - b) Radial
  - c) Median
  - d) None
- iii) The largest lymph vessel in the animal body is .....
  - a) Cervical duct
  - b) Thoracic duct
  - c) Tracheal duct
  - d) None
- iv) The longest muscle in the animal body is .....
  - a) Biceps femoris
  - b) Longissimus dorsii
  - c) Longissimus costarum
  - d) Levator costarum
- v) The vein drains the food laden blood from G.I. tract.
  - a) Coeliac
  - b) Internal iliac
  - c) Portal
  - d) External iliac
- vi) The largest and widest nerve in the animal body is .....
  - a) Trigeminal
  - b) Sciatic
  - c) Vagus
  - d) None of these

(B) Name blood / nerve supply of the following (03)

- i) Artery supplying the Right Kidney : \_\_\_\_\_
- ii) Nerve supplying to the diaphragm : \_\_\_\_\_
- iii) Nerve supplying to the Posterior Larynx : \_\_\_\_\_
- iv) Artery supplying to the testis : \_\_\_\_\_
- v) Artery supplying the lung : \_\_\_\_\_



MAHARASHTRA ANIMAL & FISHERY SCIENCES UNIVERSITY, NAGPUR  
ANNUAL THEORY EXAMINATION, B.V.Sc. & A.H.

Year : I (New Course)  
Course No. : VAN-111, 121  
Credits : 1+2= 3, 2+2 = 4  
Day & Date : Friday, 13/07/2012  
Subject/Paper Title : Veterinary Anatomy-I  
Time : 10.00 to 13.00 hrs.

Note : 1) Use Separate Answer Book for each course.

- 2) Solve Any Three questions from Section – 'A' of each course.  
3) All questions from Section – 'B' of each course are compulsory.  
4) Draw neat and well-labelled diagram wherever necessary.

VAN-111 (1+2)

Veterinary Gross Anatomy – I  
(Osteology, Arthrology & Biomechanics)

(Marks – 30)

SECTION – 'A'

- Q. 1. A) Classify the bones with one example from each type. (02)  
B) State the characters of the lumbar vertebrae. (02)
- Q. 2 A) Name the carpal bones of cattle. (02)  
B) Describe the general characters of femur of ox. (02)
- Q. 3 A) State four morphological terms which can be used to describe the structure of humerus. (02)  
B) Name the bones of the hind limb in sequence. (02)
- Q. 4 Name the bones of the skull of cattle and describe any one of them. (04)
- Q. 5 Describe the tibia and fibula of ox. (04)

SECTION – 'B'

- Q. 6 Give Answer in one or two words. (06)
- i) How many ribs are present in the thoracic wall of dog?  
ii) Which bone shows alveoli for the teeth of lower jaw?  
iii) Acromion process is present on which bone?  
iv) Which bone has the obturator foramen?  
v) How many tarsal bones are present in each hind limb of ox?  
vi) Which vertebrae reveal costal facets?  
vii) Which bones form the elbow joint?  
viii) Collateral ligaments are associated with which type of joints?  
ix) Inter-central articulation is an example of which type of joint?  
x) The bones forming the base of skull are of which type?  
xi) Round ligament is associated with which joint?  
xii) Patella is associated with which joint?

- Q. 7 Rewrite the following statements after making necessary corrections in the underlined word(s), if required. (06)
- i) Scapula is classed as an irregular bone.  
ii) When two bones are united by the cartilage, the joint is classed as suture.  
iii) Acetabulum is formed due to union of four bones.  
iv) Hip joint is formed by the acetabulum of os coxae and head of humerus.  
v) Sesamoid bones are examples of the long bones.  
vi) Sacrum of dog is formed due to fusion of five sacral vertebrae.  
vii) Tuber coxae is a part of the ischium.

(P.T.O.)

- viii) The distal end of humerus of horse articulates with carpal bones.
- ix) Olecranon is a part of the tibia.
- x) Periosteum lines the medullary cavity of the long bone.
- xi) Gluteal surface is associated with the bone pubis.
- xii) Cruciate ligament is associated with the hip joint.

Q. 8 A) Give one example from each of the following. (03)

- i) Flat bone of fore limb
- ii) Ball and socket type of joint
- iii) Fovea on the femur bone
- iv) Splanchnic bone in penis
- v) Round ligament present in joint of hind limb
- vi) Bones of elbow joint of dog

B) Match the pairs.

(03)

**Column 'A'**

**Column 'B'**

- |                            |                  |
|----------------------------|------------------|
| i) Condyles                | a) Fetlock joint |
| ii) Supra condyloid fossa  | b) Femur         |
| iii) Metacarpal tuberosity | c) Ulna          |
| iv) Proximal sesamoid      | d) Humerus       |
| v) Olecranon               | e) os coxae      |
| vi) Tuber ischii           | f) Metacarpal    |

VAN-121

**Veterinary Gross Anatomy – II**  
(Myology, Neurology, Angiology & Aesthesiology)

(30Marks)

**SECTION – 'A'**

- Q. 1 A) Name the branches of a spinal nerve. (02)
- B) Name the structures present in the right ventricle of heart (02)
- Q. 2 A) Name the muscles of the abdomen. (02)
- B) Name the parts of the membranous labyrinth of internal ear. (02)
- Q. 3 A) Name the flexor muscles of hind limb of ox. (02)
- B) Name the organs supplied by coeliac artery of cattle. (04)
- Q. 4 Discuss the blood supply to brain of cattle. (04)
- Q. 5 Write notes on 'innervation to muscles of eye ball'. (04)

**SECTION – 'B'**

Q. 6 Give Answer in one or two words. (06)

- i) Name the first branch of external iliac artery.
- ii) Name the chief vein of the hind limb of ox.
- iii) Name the ear ossicle located close to tympanic membrane.
- iv) Name the location of the nictitating membrane.
- v) Name the muscle which occupies the infraspinus fossa of scapula.
- vi) Name the dural fold carrying dorsal longitudinal sinus.
- vii) Name the conjunctiva which is reflected over anterior part of the eye ball.
- viii) Name the connection between the middle ear & pharynx.

- ix) Name the region of the body where sterno-cephalicus muscle occurs.
- x) Name the organ supplied by external pudic artery in female.
- xi) Name the organ supplied by the internal spermatic arteries.
- xii) Name the cranial nerve which innervates the internal ear.

Q. 7 Rewrite the following statements after making necessary corrections in the underlined word(s), if required. (06)

- i) The meningeal covering which follows the gyri and sulci of the brain is called arachnoidea.
- ii) Cornea is the transparent and highly vascular structure of the eye ball.
- iii) The cavity of the rhombencephalon is otherwise called as the third ventricle.
- iv) Utero-ovarian artery is a branch of the internal iliac artery.
- v) Muscle subscapularis is located on the anterior side of the shoulder girdle.
- vi) External jugular vein of ox runs in a furrow between the muscle brachio-cephalicus and omo transversarius.
- vii) The anterior mediastinal lymph node is the largest lymph gland of the body.
- viii) Vitreous body is a structure related to the ear.
- ix) Chordae tendinae extend between the atrio-ventricular valves and moderator band.
- x) Aorta originates from the right ventricle of the heart.
- xi) Epiphysis cerebri is otherwise known as the pituitary gland.
- xii) Guttural pouch is associated with eustachian tube of the ox.

Q. 8 A) Name the artery from which the following arteries originate. (03)

- i) Middle coccygeal artery
- ii) Common carotid artery
- iii) Artery to adrenal gland
- iv) Phrenic artery
- v) Internal iliac artery
- vi) External thoracic artery of ox

B) Match the pairs.

	Column 'A'	Column 'B'
i)	Muscle papillaris	a) Hind limb
ii)	Pulmonary artery	b) Basal ganglia
iii)	Coeliac artery	c) Internal ear
iv)	Utricle	d) Myocardium
v)	Muscle gastrocnemius	e) Stomach
vi)	Lenticular nucleus	f) Lung

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