

**BOWEN UNIVERSITY, IWO**  
**COLLEGE OF HEALTH SCIENCES**  
**ANATOMY PROGRAMME**  
**2020/2021 Second Semester Examination**

**Course:** ANA 412 (Radiological Anatomy) **Credit Unit:** 3 Credits **Time Allowed:** 3Hrs

**INSTRUCTION:** Answer ALL questions. You may use reference materials during the examination. No exchange between students is allowed.

1. Write on the procedure, features, uses, merits and demerits of the imaging procedure of the limb indicated in a 50years old woman that was diagnosed with clots in the blood stream. (20 marks).
2. What is the most common radio imaging procedure in women of reproductive age group. Give detailed account of the modality when applied to the normal physiological state peculiar to this segment of the population. (20 marks).
3. Describe the mechanisms, procedure, views and features obtainable in a well taken roentgenograph of the thorax. (15 marks).
4. What are the merits and demerits of newer radiological modalities over and above plain X-ray of the head and neck. (15 marks).

- shows the condyle of mandible slipped out of the glenoid fossa of temporal bone
- a. Highlight the gross anatomy of the affected joint under these headings; articular surface, articular capsule, ligaments, movement, neurovasculature. 10Marks
  4. a. Extrinsic muscles of the tongue are supplied by the hypoglossal nerve. True or False? 1Mark  
b. Highlight the origin, insertion and action of extrinsic muscles of the tongue 9 Marks
  5. Deglutition involves the transfer of food bolus from the mouth through the pharynx and oesophagus into the stomach.  
a. List the muscle of mastication 2 Marks  
b. Highlight the anatomical basis of deglutition 8 Marks
  6. a. Highlight the anatomical basis of transillumination of sinuses 5 Marks  
b. Highlight the anatomy of maxillary sinuses 5 Marks
  7. Highlight the osteology of a typical cervical vertebrae. 10 Marks

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**COLLEGE OF HEALTH SCIENCES**  
**ANATOMY PROGRAMME**  
**SECOND SEMESTER 2020/2021 ACADEMIC SESSION**  
**ANA 302 GROSS ANATOMY OF HEAD AND NECK (3 CREDITS)**  
**3 HOURS**

**INSTRUCTION: Answer questions 1& 2 and any other 4. Well labelled diagrams as appropriate will enhance your marks**

1. Mr Ojomojo was presented unconscious from an accident scene. As the attending emergency paramedics, you suspected cardiac arrest confirmed by absence of carotid pulse. Computed tomography scan discovered the fracture of the petrous part of the temporal bone.
  - a. Highlight the boundaries, contents of carotid triangle. 5 Marks
  - b. Highlight the formation, course and branches of the external carotid artery. 10 Marks
  - c. The petrous part of the temporal bone forms the inferior border of middle cranial fossa. True or False? 1 Mark
  - d. Name the foramina and one structure that traverses each foramen in the middle cranial fossa. 9 Marks
2. Mr Ajenikoko has obstructive airway above the voicebox. Small incision is made in the midline of \_\_\_\_\_ ligament an endotracheal tube is inserted to secure the airway.
  - a. Name the ligament where the incision is made? 1Mark
  - b. Name the innervation to the corresponding name muscle? 1Mark
  - c. Highlight the vascular supply of the voicebox? 8Marks
3. Kelechi a habitual gum chewer, developed jaw pain with sore jaw muscles. Radiographic examination shows the condyle of mandible slipped out of the glenoid fossa of temporal bone
  - a. Highlight the gross anatomy of the affected joint under these headings; articular surface, articular capsule, ligaments, movement, neurovasculature. 10Marks
4. a. Extrinsic muscles of the tongue are supplied by the hypoglossal nerve. True or False? 1Mark
- b. Highlight the origin, insertion and action of extrinsic muscles of the tongue 9 Marks
5. Deglutition involves the transfer of food bolus from the mouth through the pharynx and oesophagus into the stomach.
  - a. List the muscle of mastication 2 Marks
  - b. Highlight the anatomical basis of deglutition 8 Marks
6. a. Highlight the anatomical basis of transillumination of sinuses 5 Marks
- b. Highlight the anatomy of maxillary sinuses 5 Marks
7. Highlight the osteology of a typical cervical vertebrae. 10 Marks

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ANATOMY PROGRAMME  
2020/2021 FIRST SEMESTER EXAMINATION**

**Course Code: ANA 303**

**Time Allowed: 1 hour, 30 minutes**

**INSTRUCTION: ANSWER QUESTION ONE (1) AND ANY OTHER  
THREE (3) QUESTIONS**

1. Outline the histological components of blood- urine barrier at renal corpuscle (25 Marks)
2. Highlight the histology of intratesticular genital tract (15 Marks)
3. Briefly discuss the histological effects of oestrogen on the endometrium (15 Marks)
4. Outline the functions of the Chromophils of the adenohypophysis (15 marks)
5. List the four pancreatic cells and their functions (15 marks)

(b) State the type of stain that can be used to stain the following structures

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ANATOMY PROGRAMME**

**FIRST SEMESTER 2020/21 EXAMINATION**

**COURSE CODE: ANA 301**

**COURSE TITLE: ABDOMEN, PELVIS, PERINEUM**

**TIME ALLOWED: 3 HOURS**

**INSTRUCTIONS: ANSWER ANY FIVE QUESTIONS**

1. a. What is defecation reflex? **3 marks**  
b. Distinguish between upper and lower anal canal **7 marks**
2. a. Mention five (5) hepatic attachments and their points of attachment **5 marks**  
b. Where are the four places where will you find portal-systemic anastomoses? **2 marks**  
c. Describe the porta hepatis and components **3 marks**
3. a. Describe the pelvic floor **8 marks**  
b. List any two functions **2 marks**
4. Mention the structures that form the support system for the pelvic organs **10 marks**
5. Write a short note on the male urethra **10 marks**
6. a. Mention five ligaments of the uterus and location **5 marks**  
b. Write short note on
  - i. Umbilical hernias **5 marks**
  - ii. Acquire umbilical hernias **5 marks**
7. a. Enumerate the structures that form the boundaries of the perineum **5 marks**  
b. Highlight five structures each found within the male and female superficial perineal space **5 marks**

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**ANATOMY PROGRAMME**  
**FIRST SEMESTER 2021/2022 EXAMINATION**

**COURSE CODE: ANA 403 (HISTOCHEMISTRY AND CYTOCHEMISTRY)**

**COURSE CREDIT: TWO (2)**

**TIME ALLOWED: 2 HOURS**

**INSTRUCTIONS: Answer Questions ONE (1) and ANY Other THREE (3)**

1. a. What is histochemistry (5 Marks)
  - b. State the basic principle of histochemistry (5 Marks)
  - c. Mention the principles and the classification of dyes (10 Marks)
  - d. Write briefly on the historical background of histochemistry (5 Marks)
2. State five reasons each why the following procedures are carried out in histochemistry
  - a. Fixation
  - b. Embedding
  - c. Sectioning (15 Marks)
3. Describe in the detail the histochemical protocol you would employ to demonstrated Nucleic acids (15 Marks)
4. What is Enzyme histochemistry (3 Marks)
  - a. Discuss the application of Enzyme histochemistry versus Biochemical quantification in biomedical research (12 Marks)
5. Discuss the histochemistry of the following
  - a. Carbohydrate (8 Marks)
  - b. Nerve tissue (7 Marks)
6. Describe the procedure involved in immunohistochemistry/cytochemistry (15 Marks)
7. Discuss the stains for proteins and amino acids (15 Marks)

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**ANATOMY PROGRAMME**  
**SECOND SEMESTER 2020/2021 ACADEMIC SESSION**  
**ANA 402 COMPARATIVE ANATOMY (3 CREDITS)**

**Time Allowed: 3 Hours**

**Instruction: Answer question 1 and any other 3 questions**

- |   |          |
|---|----------|
| 1. Describe the role of vision in the adaptation of vertebrata to their environment.          | 20 marks |
| 2. Describe the role of courtship in the continuous existence of aves and mammals.            | 20 Marks |
| 3. In a tabular form write on the respiratory apparatuses in amphibians, pisces and reptiles. | 20 Marks |
| 4. a. Define bipedalism, highlight the two forms of bipedalism.                               | 4 Marks  |
| b. Describe the mechanism of bipedalism in amphibians and aves.                               | 16 Marks |
| 5. Highlight the lymphatic system of the Subphylum mammals.                                   | 20 Marks |

limb indicated in a 50years old woman that has diagnosed with osteoarthritis (10 marks).

2. What is the ...

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**2020/2021 SECOND SEMESTER EXAMINATION**

**COURSE: Anatomy Laboratory Techniques (ANA 310) Time Allowed: 3Hrs**  
**INSTRUCTION: Answer any three (3) questions in the answer booklet provided.**

(a) Discuss the factors that affect fixatives and fixation

(b) State the use of the following fixatives and the proportion of the different components in them

- i. Carnoys Fixative
- ii. Bouin's fluid
- iii. Zenker's fluid

20 Marks

1. (a) Write short notes on

- i. Sectioning
- ii. Mounting
- iii. Embedding
- iv. Clearing

(b) Explain the reason for the dehydration and rehydration of tissues in during processing for paraffin sections

20 Marks

2. (a) Describe the procedure for staining a rat tissue with Haematoxylin and Eosin

(b) State the type of stain that can be used to stain the following structures

- i. Glycogen
- ii. Myelin
- iii. Amyloid fibrils
- iv. Lipoproteins
- v. Iron deposits
- vi. Adipose tissues

20 Marks

3. Describe the process of embalming under the following headings

- a. Equipment needed
- b. Chemicals used
- c. Route of administration

**BOWEN UNIVERSITY, IWO**  
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**ANATOMY PROGRAMME**  
**2020/21 ACADEMIC SESSION (2<sup>ND</sup> SEMESTER EXAMINATIONS)**  
**ANA 308 (SYSTEMIC HISTOLOGY III)**

**INSTRUCTIONS:** Answer ALL Questions.

**TIME ALLOWED: 2 HOURS**

1. Write an essay on degeneration and regeneration of neurons (10 marks)
2. Mr. Jack Bauer complained of inability to work properly with his right hand. He usually sways to the right side while walking. He could not do rapid pronation and supination of his right forearm. Magnetic resonance imaging showed a tumor in his right lobe of the cerebellum.
  - a. Which cerebellar functions have been lost to give rise to above symptoms? (2 marks)
  - b. Name the peduncles of the cerebellum (3 marks)
  - c. Succinctly write on the histology of the part of the brain affected and highlighting the layers in it (15 marks).
3. Mr Femi Abe of 90 years complained of severe headache on his right side. After two hours he could not move his left upper and left lower limbs. His voice was also altered. CT scan showed bleeding in the area of internal capsule.
  - a. Where is the lesion in the brain responsible for his symptoms? (5 marks)
  - b. Do well to highlight the histology of the area concern (10 marks).
4. Write short notes on the following:
  - a. Histogenesis of neurons (5 marks)
  - b. Histology of the spinal cord (5 marks)
  - c. Peripheral nerve endings (5 marks)

**BOWEN UNIVERSITY, IWO**  
**COLLEGE OF HEALTH SCIENCES (COHES)**  
**ANATOMY PROGRAMME**  
**2020/21 ACADEMIC SESSION (2<sup>ND</sup> SEMESTER EXAMINATIONS)**  
**ANA 308 (SYSTEMIC HISTOLOGY III)**

**INSTRUCTIONS:** Answer ALL Questions.

**TIME ALLOWED: 2 HOURS**

1. Write an essay on degeneration and regeneration of neurons (10 marks)
2. Mr. Jack Bauer complained of inability to work properly with his right hand. He usually sways to the right side while walking. He could not do rapid pronation and supination of his right forearm. Magnetic resonance imaging showed a tumor in his right lobe of the cerebellum.
  - d. Which cerebellar functions have been lost to give rise to above symptoms? (2 marks)
  - e. Name the peduncles of the cerebellum (3 marks)
  - f. Succinctly write on the histology of the part of the brain affected and highlighting the layers in it (15 marks).
3. Mr Femi Abe of 90 years complained of severe headache on his right side. After two hours he could not move his left upper and left lower limbs. His voice was also altered. CT scan showed bleeding in the area of internal capsule.
  - a. Where is the lesion in the brain responsible for his symptoms? (5 marks)
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  - d. Histogenesis of neurons (5 marks)
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ANATOMY PROGRAMME  
SECOND SEMESTER 2020/2021 ACADEMIC SESSION  
ANA 304 NEUROANATOMY (3 CREDITS)**

**INSTRUCTION: Answer all questions. Time Allowed 1 HOUR**

1. Give an account of the motor pathway. (20 Marks)
- 2a. Draw and label a transverse section of the spinal cord showing ascending and descending tracts. (10 Marks)
- b. Write an essay on the spinocerebellar tracts. (10 Marks)
3. Describe topographic anatomy of the cerebrum. (20 Marks)

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**SECOND SEMESTER 2020/2021 ACADEMIC SESSION  
ANA 302 GROSS ANATOMY OF HEAD AND NECK (3 CREDITS)**

**INSTRUCTION: Answer all questions. Well labelled diagrams as appropriate will enhance your marks.**

**Time Allowed: 1 HOUR**

- 1a. Write short note on the osteology of a typical cervical vertebrae. (10 Marks)
- b. Highlight the gross anatomy of the larynx using this format: location and relations, arterial supply, lymphatics and nerves (10 marks)
- 2a. Describe the formation, course and the distribution of the arterial supply to the brain? (10 Marks)
- b. Highlight the gross anatomy of temporomandibular joint under these headings; articular surface, articular capsule, ligaments, movement, neurovasculature and clinical significance. (10 marks)
- 3a. Highlight the formation, foramina and at least one content of the middle cranial fossa? (10 Marks)
- b. Write short note on the boundaries, contents and list the subdivision of the Anterior Triangles of the neck. (10 marks)

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**FIRST SEMESTER 2020/21 EXAMINATION**

**COURSE CODE: ANA 301      COURSE TITLE: GROSS ANATOMY OF ABDOMEN, PELVIS & PERINEUM**

**INSTRUCTIONS: QUESTION 1 AND 2 ARE COMPULSORY, THEN ANSWER ANY FIVE QUESTIONS**

1. Mention the muscles of the anterolateral abdominal wall, nerve supply and functions 10 marks
2. What are the arteries that supply the abdomen? 10 marks
3. a. Highlight five differences between the upper and lower anal canal 5 marks  
b. Write a short note on:
  - i. Rectal prolapse 2.5 marks
  - ii. Rectocele 2.5 marks
4. Describe the lobes of the liver 10 marks
5. Describe the parts of the pancreas 10 marks
6. a. What five structures are transmitted through the greater sciatic foramen? 5 marks  
b. Highlight five differences between the male and female pelvis 5 marks
7. Write a short note on the ligaments of the uterus 10 marks
8. a. Mention five structures each found in the male and female deep perineal pouches 5 marks  
b. What nerves make up the lumbosacral plexus? 5 marks

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**ERP 2020/2021 SESSION**

**Course:** ANA 303 **Credit Units:** 1 Credits **Time Allowed:** 1 HOUR

**INSTRUCTION:** Answer questions One (1) and Any other Two (2)

1. Describe the Histology of the Renal Corpuscles **(30 Marks)**

2. Describe the Histology of the following

a. Uterus

b. Cervix **(20 Marks)**

3. Describe the histology of any two the following

a. Inactive mammary gland

b. Testes

c. Cowper's Gland **(20 Marks)**

4. Write on one of the following

a. Juxtaglomerular apparatus

b. Urinary Bladder **(20 Marks)**

**BOWEN UNIVERSITY**  
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DEPARTMENT OF ANATOMY

ERP EXAMINATION  
ANA 207: GENETICS

2020/2021 SESSION

INSTRUCTIONS: ANSWER ALL QUESTIONS.

TIME: 1 HOUR

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1. A 19 year old boy was rushed to a surgical emergency unit on account of persistent, painful, purposeless, penile erection.
- What genetic disorder is this?
  - Using punnett's square only, how can it be inherited?
  - What major cell in the body is affected?

(10 Marks)

2. State the genetic condition implicated the following:
- Simean crease
  - Kleptomania
  - Inability to recognize rainbow
  - Painful swollen hands and feet
  - Cat-like cry
  - Lack of hair in the head
  - Webbed neck male
  - Gynaecomastia
  - Smiling face
  - Hypo pigmented skin

(10 Marks)

3. A 5 year old girl was sent out of school because she has low IQ. Her mother observed a single line on her palm crease
- What genetic disorder is this?
  - State the main genetic factor or basis for this condition
  - State her karyotype

(10 Marks)

4.
  - Draw a well labeled diagram of the human chromosome
  - List structural chromosomal disorders

(10 Marks)

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**ERP 2020/2021 Session**

**Course:** ANA 412 (Radiological Anatomy) **Credit Unit:** 3 Credits **Time Allowed:** 3Hrs

**INSTRUCTION:** Answer ALL questions.

1. What is the most common radio imaging procedure in women of reproductive age group? Give detailed account of the modality when applied to the normal physiological state peculiar to this segment of the population. (20 marks).
2. Describe the mechanisms, procedure, views and features obtainable in a well taken roentgenograph of the thorax. (15 marks).
3. From your knowledge of radiology, write extensively on the antero-posterior view of the Shoulder region, Elbow and Hip region (15 marks)
4. Write an essay on Bronchography (20 marks)

**BOWEN UNIVERSITY  
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ERP 2020/2021**

**COURSE TITLE: GENERAL HISTOLOGY**

**COURSE CODE: ANA 205**

**TIME ALLOWED: 2 HOURS**

**INSTRUCTION: QUESTION 1 IS COMPULSORY, THEN ANSWER ANY OTHER 5**

- |   |          |
|---|----------|
| 1. a. Describe any four types of light microscope                         | 10 marks |
| b. Describe the nucleus and state its functions                           | 10 marks |
| 2. Tabularize the types, locations and functions of any 5 collagen fibres | 10 marks |
| 3. What are the specializations of the cell surface of the epithelium?    | 10 marks |
| 4. Write a short note on the following:                                   |          |
| a. Hyaline cartilage  | 4 marks  |
| b. Elastic cartilage  | 3 marks  |
| c. Fibrocartilage   | 3 marks  |
| 5. Tabulate the differences between the three types of muscles            | 10 marks |
| 6. a. Give a well annotated diagram of a nerve                            | 5 marks  |
| b. Classify nerves based on their processes and functional roles          | 5 marks  |
| 7. What are the features of an elastic artery                             | 10 marks |

(c). State the clinical implications of (i) premature hatching of the blastocyst,  
(ii) failure of the blastocyst to hatch

4 m

8 m

6 m

5. Write short notes on
- (a). The formation of the chorionic villi
  - (b). The decidua

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DEPARTMENT OF ANATOMY

ERP EXAMINATION 2020/2021 SESSION  
ANA 209: ANATOMY FOR NON-ANATOMY MAJOR I 3 CREDITS  
INSTRUCTIONS: ANSWER ALL QUESTIONS. TIME: 3 HOURS

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1. Outline the roles of anatomy to public health (10 Marks)
2. Draw a well labeled diagram of the female external genitalia (10 Marks)
3. a. List the components of the juxtaglomerular apparatus  
b. State any two functions of the juxtaglomerular apparatus (10 Marks)
4. List five derivatives each of ectoderm and endoderm (10 Marks)
5. a. List five applied anatomy of the respiratory system  
b. Explain the anatomical basis of one of (a) above (10 Marks)
6. Using flow chart show the organization of the nervous system (10 Marks)
7. Draw a well labeled diagram of man showing the location of various endocrine glands (10 Marks)

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**ERP 2020/2021 Session**

**Course:** ANA 412 (Radiological Anatomy) **Credit Unit:** 3 Credits **Time Allowed:** 3Hrs

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