CINEC CAMPUS
Beyond A Graduate

PAST PAPERS

Faculty	Department / Section/Division
Not Applicable	Learning Resource Centre

Past Papers

Faculty of Health Sciences

Higher diploma in Biomedical Sciences

(Year 1 – Semester II)

Document Control & Approving Authority	Senior Director – Quality Management & Administration

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CINEC CAMPUS
Beyond A Graduate

Faculty of Health Sciences

Higher Diploma in Biomedical Sciences

HD 1223 Physiology

Batch – 01

1st Year 2nd Semester

End Semester SEQ Repeat Examination

Date : 27th of January 2023

Time : 9.00 am. – 11.00 am (2 Hours)

INSTRUCTIONS TO CANDIDATES

- This question paper consists of **FOUR** questions.
- Answer **ALL** questions.
- You should write legibly in black or blue ink.
- You are not allowed to take out the examination papers.

Question 01 **(100 marks)**

1.1 List the hormones which are secreted by the ovaries (10 marks)

1.2 State the **two functions from each** of the hormones stated in question number 1.1 (20 marks)

1.3 List the functions of testosterone hormone (15 marks)

1.4 State the functions of each structure of the male reproductive system (25 marks)

1.5 List the steps of spermatogenesis process (30 marks)

Question 02 **(100 marks)**

2.1 List **five** constituents in the glomerular filtrate (15 marks)

2.2 List **five** components absent in glomerular filtrate (15 marks)

2.3 Briefly describe **five** main functions of the kidneys (30 marks)

2.4 Briefly describe the process of urine formation (40 marks)

Question 03 **(100 marks)**

3.1 List **five** functions of respiratory system (10 marks)

3.2 Briefly describe on followings

3.3.1 Inspiration (20 marks)

3.3.2 Expiration (20 marks)

3.3 Name the factors affecting for Lung compliance (10 marks)

3.4 List the **four** major components of conduction system of the heart (10 marks)

3.5 Briley describe the process of blood circulation through the heart (30 marks)

Question 04 **(100 marks)**

4.1 List **four** constituents of saliva (10 marks)

4.2 Briefly describe the main functions of following organs

4.2.1 Stomach (20 marks)

4.2.2 Small intestine (20 marks)

4.2.3 Large intestine (20 marks)

4.3 Describe **three** phases of gastric juice secretion (30 marks)

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CINEC CAMPUS
Beyond A Graduate

Faculty of Health Sciences

Higher Diploma in Biomedical Sciences

Instrumentation (HD 1253)

Batch 01

1st year 2nd Semester

End Semester SEQ Examination-Repeat

Date: 25th January 2023
Time: From 9.00 am to 12.00 pm

INSTRUCTIONS TO CANDIDATES

- This question paper consists of **SIX** questions.
- Answer **all** questions.
- You should write legibly in black or blue ink.
- You are not allowed to take out the examination paper

Question 01 **(100 marks)**

1.1. What does it mean by "Good Laboratory Practice (GLP)"? (10 marks)

1.2. Mention the two objectives of Good Laboratory Practice. (15 marks)

1.3. List the three instruments that are commonly used in the Microbiology laboratory. (15 marks)

1.4. Describe the basic steps of cleaning glassware. (30 marks)

1.5. List four (04) volumetric glassware which are used for heating liquids. (30 marks)

Question 02 **(100 marks)**

Write short notes for the following instruments.

2.1. Autoclave machine (25 marks)

2.2. Incubator (25 marks)

2.3. Compound light microscope (25 marks)

2.4. Water bath (25 marks)

Question 03 **(100 marks)**

3.1. What are the instruments seen in the molecular biology laboratory? (20 marks)

3.2. List the main components of a light microscope. (20 marks)

3.3. Briefly describe the applications of the spectrophotometer in laboratory settings. (20 marks)

3.4. Describe the automated instruments and their application in the pathology laboratory. (40 marks)

Question 04 **(100 marks)**

4.1 State five principles of Good Microbiological practices. (15 marks)

4.2 Differentiate the Class I biological safety cabinet and Class II biological safety cabinet. (15 marks)

4.3 Briefly describe the common disinfecting methods used in microbiology laboratory. (30 marks)

4.4 State the instruments used in immunology laboratory and their applications. (40 marks)

Question 05 **(100 marks)**

5.1 Define the term of "precision". (30 marks)

5.2 List the instruments and glassware used in advanced chemistry laboratory. (30 marks)

5.3 Mention the applications of ELISA instrument. (40 marks)

Question 06 **(100 marks)**

6.1 What are the Good Laboratory Practices used in chemistry laboratory? (15 marks)

6.2 What is the use of pH meter? (15 marks)

6.3 List the types of centrifuge machine used in all the laboratories. (30 marks)

6.4 Describe the common chromatography techniques and their application. (40 marks)

Library.

CINEC CAMPUS
Beyond A Graduate

Faculty of Health Sciences

Higher Diploma in Biomedical Sciences

HD 1223 Physiology

Batch – 01

1st Year 2nd Semester

End Semester MCQ Repeat Examination

Date : **27th of January 2023**
Time : **11.00 am - 12.00 noon (1 hour)**

INSTRUCTIONS TO CANDIDATES

- This question paper consists of **TWENTY MCQ** questions
- Answer **ALL** questions
- **Each question consists of five statements** and you need to select and mark either **True (T)** or **False (F)** in each statement.

  Ex:

T	T	F	F	T
F	F	F	F	F

- You should write legibly in black or blue ink.
- You are **not allowed** to take out the examination papers.

Mark true or false regarding the statements in following questions.

1. **True or false regarding respiratory organs,**
   1. Nasal cavity humidifies the inhaled air
   2. Pharynx involves in voice production
   3. Lungs are involving in excretion function
   4. Alveoli are involving in internal respiration
   5. Bronchioles make a passageway for air

2. **True or false regarding respiration,**
   1. Expiration is an active process
   2. Diaphragm moves upward when inspiration
   3. Inspiratory muscles relax at the end of inspiration
   4. Size of chest cavity decreases when inspiration
   5. Inspiration needs energy

3. **Regarding lung volumes and capacities,**
    1. Tidal volume is 500 ml
    2. Dead spaces involve in gas exchange
    3. Residual Volume is 1200ml
    4. Expiratory Reserve Volume is 1200ml
    5. Inspiratory Reserve Volume is 3100ml

4. **True or false regarding nervous system,**
    1. Motor nerves convey signals to effector cells
    2. Autonomic nervous system relaxes the body after an emergency
    3. Neurons transmit impulses
    4. Sensory nerves conduct signals from sensory receptors to brain
    5. Parasympathetic nervous system prepares the body for an emergency

5. **True or false regarding functions of skeletal muscles,**
    1. Skeletal muscles are under voluntary control
    2. Actin and myosin are involve in muscle contractions
    3. Ca^{+} ions are involved in muscle contraction
    4. Muscle twitch starts after the start of muscle depolarization
    5. Acetylcholine releases by the skeletal muscles when relaxation

6. **Regarding endocrine system,**
    1. Hypothalamus secretes growth hormone
    2. Anterior pituitary secretes prolactin
    3. TRH secreted by the hypothalamus
    4. Adrenal gland secretes epinephrine
    5. Glucagon is secreted by pancreas

7. **Regarding the functions of smooth muscles,**
    1. Smooth muscles are under conscious control
    2. Smooth muscles are covering the cavities
    3. These regulate diameter of tracts
    4. These have the ability to initiate their own contractions
    5. Action is regulated by autonomic nervous system

8. **Regarding the function of the brain,**
    1. Cerebral cortex is responsible for thinking
    2. Cerebellum helps to keep the equilibrium
    3. Hypothalamus balances the body temperature
    4. Pons involves in memory
    5. Midbrain involves in reasoning

9. True or false regarding cardiac functions,

1. SA node generates electrical impulses
2. Electrical impulse transports from SA node to AV node
3. Bundle of his transports impulse to the Perkinje system
4. Perkinje system transports impulse to cardiac muscle
5. Coronary arteries supply the blood to heart muscle

10. Regarding female reproductive system,

1. Fertilization of ovum occurs inside the uterus
2. Fallopian tubes transport the ovum to uterus
3. Cervix involves in transport semen to the uterus
4. Ovaries secretes HCG hormone
5. Fimbriae catches the ovum which expelled by the ovaries

11. Regarding urinary system,

1. Kidneys are involved in erythropoietin production
2. Fibrous capsule protects the kidney from injuries
3. Urinary bladder stores the urine until it passes
4. Reabsorption starts from the bowman's capsule
5. Leucocytes are present in glomerular filtrate

12. True or false regarding skeletal muscle functions,

1. Skeletal muscle have voluntary control over it
2. Actin-myosin cross-bridges are formed, when muscle contraction
3. Action potential is transmitted along the muscle fiber
4. Na+ ions are involved in skeletal muscle relaxation
5. Skeletal muscles involve in locomotion

13. True or false regarding GI system,

1. Tongue is involving in deglutition
2. Stomach is involving in HCL secretion
3. Liver emulsifies the lipids in small intestine
4. Gallbladder produces bile
5. Pancreas secretes enzymes to jejunum

14. Regarding female sex hormones,

1. Estrogen is secreted by the uterus
2. Mainly secreted estrogen is estradiol
3. Estrogen regulates the growth & development of human body
4. Estrogen influences on skeletal system
5. Estrogen helps to maintain body fluid balance

15. True or false regarding the blood pressure,

1. Systolic pressure occurs due to contraction of ventricles
2. Heart muscles are relaxed when the systole
3. Diastolic blood pressure is the highest arterial blood pressure
4. Diastolic pressure occurs when the ventricles are at rest
5. Systolic blood pressure is about 120mmHg in healthy adults

16. True or false regarding peristalsis,

1. It is a voluntary process in GI system
2. Smooth muscle cells are involving in peristalsis
3. Peristalsis can be seen only in esophagus
4. By the peristalsis, the food bolus passes to stomach
5. Contraction and relaxation smooth muscles occur in peristalsis

17. Regarding the functions of the skeletal system,

1. Provide support for soft tissues
2. Produces white blood cells
3. Involves in balancing mineral levels
4. Stores triglycerides
5. Produces calcium which needs for bones

18. True or false regarding the reflexes,

1. Checking patella reflex to find the activity of S1- S2 nerves
2. Deep plantar reflex reflects the activity of L5-S2 nerves
3. Cremaster reflex indicates the contraction of scrotum
4. Checking triceps-reflex is to find the function of C6 - C7 nerves
5. Checking Achilles tendon reflex is to find the function of S1- S2 nerves

19. True or false regarding functions of male reproductive system,

1. Epididymis carries stores sperm cells
2. Vas deferens transports matured sperms to epididymis
3. Ejaculatory ducts transport sperms to the urethra
4. Seminal vesicles produce semen
5. Prostate gland nourishes the sperms

20. True or false regarding sensory tests,

1. Snellen chart is using to test color blindness
2. Sour taste can be identified by the lateral borders of tongue
3. Holmgren's test is performing as a visual acuity test
4. The frequency of the tuning fork that use for Rinne's test is 522Hz
5. Distance between the Snellen's chart and the patient is 20m

CINEC CAMPUS
Beyond A Graduate

Faculty of Health Sciences

Higher Diploma in Biomedical Sciences

HD 1243 – Fundamentals of Genetics

Batch – 01

1st Year 2nd Semester

End semester Repeat SEQ Examination

Date : **23rd of January 2023**
Time : **9.00 am. – 12.00 pm (Three Hours)**

INSTRUCTIONS TO CANDIDATES

- This question paper consists of **SIX** questions.
- Answer **ALL** questions.
- You should write legibly in black or blue ink.
- You are not allowed to take out the examination papers.

QUESTION 01 **(100 marks)**

1.1. Write a short notes on following.

i. Importance of using model organisms for genetic studies. (40 marks)
ii. Applications of genetics. (30 marks)
iii. Classification of chromosomes. (30 marks)

QUESTION 02 **(100 marks)**

2.1. Define what is known as polygenic inheritance. (15 marks)

2.2. Mention three types of genetic polymorphism seen in pharmacogenetic studies. (15 marks)

2.3. Describe how pharmacogenetic testing is helpful in practicing personalized medicine. (35 marks)

2.4. Write a short note on consequences of polymorphisms. (35 marks)

QUESTION 03 **(100 marks)**

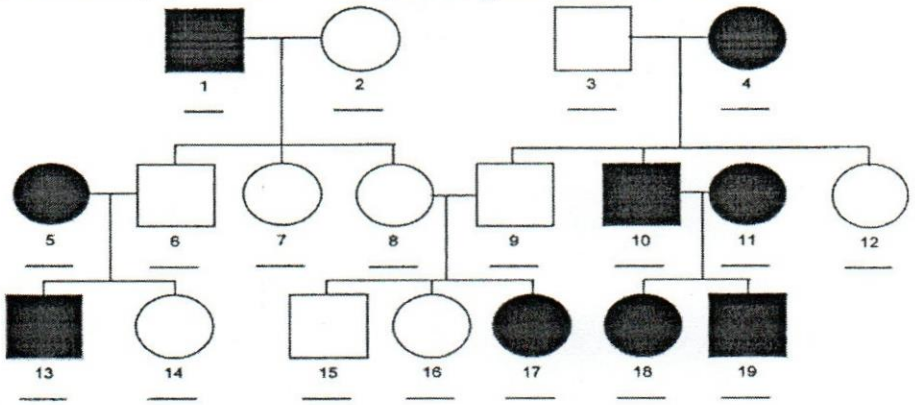
3.1. Draw a diagram to denote the coupling and repulsion hypothesis of genetic linkage. (25 marks)

3.2. State five factors responsible for phenotypic variation. (25 marks)

3.3. Compare and contrast between founder effect and bottle neck effect. (50 marks)

QUESTION 04 **(100 marks)**

4.1. Answer the following questions referring to the given pedigree chart.



4.1.1. Identify the above pedigree type. (25 marks)
4.1.2. Provide reasons for your answer in 3.1.1. (25 marks)
4.1.3. Mention the genotypes of the affected individuals. (25 marks)
4.1.4. Discuss the probability of 17^{th} & 18^{th} individuals of generation III having a child with the trait. (25 marks)

QUESTION 05 **(100 marks)**

5.1. List the steps that are followed in engaging a couple in a genetic counseling. (20 marks)

5.2. State the main indications for prenatal diagnosis. (20 marks)

5.3. Discuss on the importance of prenatal diagnostic tests. (30 marks)

5.4. Describe the importance of genetic counselling. (30 marks)

QUESTION 06 **(100 marks)**

6.1. A sick cell anaemic male (H^SH^S) and a carrier female (H^AH^S) marries and have children,
6.1.1. Draw a punnett square to denote the genotypes of their offspring. (30 marks)
6.1.2. Calculate the percentages of the offspring with different genotypes. (30 marks)

6.2. A man with blood group A marries a woman with blood group B.

6.2.1. Discuss the possible phenotypes of their offspring. (40 marks)

CINEC CAMPUS
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Faculty of Health Sciences

Higher Diploma in Biomedical Sciences

HD 1233 – Biochemistry

Batch – 01

1st Year 2nd Semester

End semester Repeat SEQ Examination

Date : **19th of January 2023**
Time : **9.00 am. – 12.00 pm (Three Hours)**

INSTRUCTIONS TO CANDIDATES

- This question paper consists of **SIX** questions.
- Answer **ALL** questions.
- You should write legibly in black or blue ink.
- You are allowed to use a scientific calculator for the examination.
- You are not allowed to take out the examination papers.

QUESTION 01 **(100 marks)**

1.1. Define reducing and non-reducing sugars. (10 marks)

1.2. Differentiate Phosphofructokinase-1 and Fructose 1,6-bisphosphatase. (30 marks)

1.3. Draw a flow chart to denote the basic steps involved in the citric acid cycle. (30 marks)

1.4. Describe the role of fructose 2,6-bisphosphate in glycolysis. (30 marks)

QUESTION 02 **(100 marks)**

2.1 Write short notes on following.

i. Double helix structure of DNA. (30 marks)
ii. Structure of messenger RNA. (30 marks)

2.2. Outline the reactions involved in de novo synthesis of purine nucleotides. (40 marks)

QUESTION 03 **(100 marks)**

3.1. Describe the digestion and absorption of dietary lipids. (25 marks)

3.2. Write a short note on biological functions of lipids. (25 marks)

3.3. Draw a diagram to denote fatty acid synthase complex. (25 marks)

3.4. Describe the regulation of hormone sensitive lipase (HSL). (25 marks)

QUESTION 04 **(100 marks)**

4.1. Write a short note on sodium- potassium pump. (30 marks)

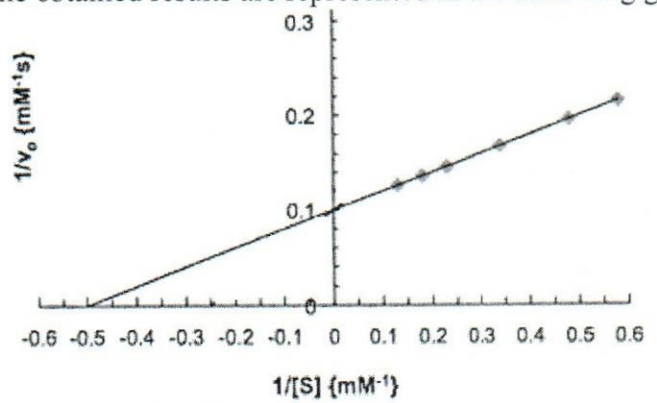
4.2. Differentiate between uniport and symport systems. (20 marks)

4.3. Compare and contrast between the types of ATP driven pumps. (20 marks)

4.4. Explain the role of ubiquinone in electron transport chain. (30 marks)

QUESTION 05 **(100 marks)**

5.1.A researcher carried out an experiment to detect the effect on enzyme A using different substrate concentrations. The obtained results are represented in the following graph.



5.1.1 Mention the name given for this graph. (15 marks)

5.1.2. Calculate Km value for the enzyme A. (25 marks)

5.1.3. Calculate Vmax for the enzyme A. (25 marks)

5.2. Discuss the effect of pH on the activity of enzymes. (35 marks)

QUESTION 06 **(100 marks)**

6.1. Write a short note on secondary and tertiary structure of proteins. (25 marks)

6.2. Denote the sequence of reactions involved in glucose alanine cycle. (25 marks)

6.3. Describe the regulation of urea cycle. (25 marks)

6.4. Write a short note on metabolic defects associated with protein metabolism. (25 marks)

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Faculty of Health Sciences

Higher Diploma in Biomedical Sciences

IPS 2143 Organic Chemistry
Batch 01
Special Examination

INDEX NUMBER: .....

Date: 18th of January 2023

Time: 09.00 am – 12.00 pm - Three Hours

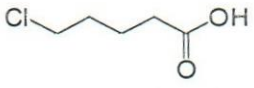
INSTRUCTIONS TO CANDIDATES

- This question paper consists of **SIX** questions.
- Answer **ALL** questions.
- You should write legibly in black or blue ink.
- You are not allowed to take out the examination papers.

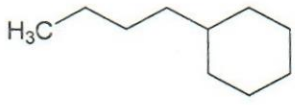
Question 1 **(100 marks)**

1.1 Name the following structures in IUPAC nomenclature. (20 marks)

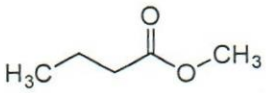
(a)



(b)

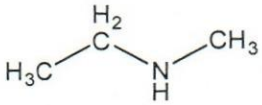


(c)



(d)

(e)



1.2 Draw the structures corresponding to the following IUPAC names. (20 marks)

(a) 2-propyl-1-pentene

(b) 3-methylhexane

(c) 2,4,6-Trinitrophenol

(d) 3- aminobenzoic acid

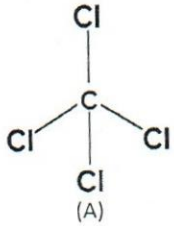
(e) 2-methylheptan-3-one

1.3 Identify the alkene obtained on dehydration of following alcohols. (You may draw the structure of the product in your answer sheet) (20 marks)

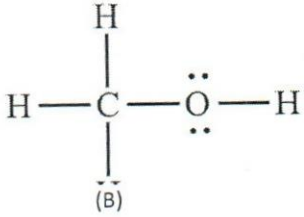
a. 2-ethyl-3-pentanol

b. 2-hexanol

1.3 Comment on the polarity of the molecules given below and briefly indicate the reason for your answer for each molecule. (40 marks)



(A)

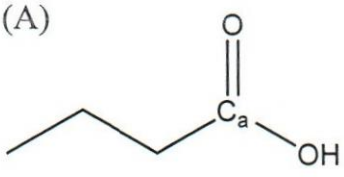


(B)

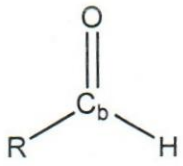
Question 02 **(100 marks)**

2.1. Determine the oxidation states on the carbon atoms (C_a, C_b, C_c, C_d) of following organic molecules. (20 marks)

(A)

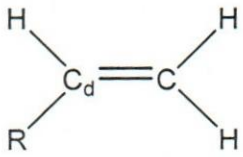


(B)



(C)

(D)



2.2. Classify each of the following reactions as an electrophilic/nucleophilic addition, elimination, substitution, or rearrangement. (30 marks)

(a) $C_6H_6 + CH_3Cl \longrightarrow C_6H_5CH_3 + HCl$

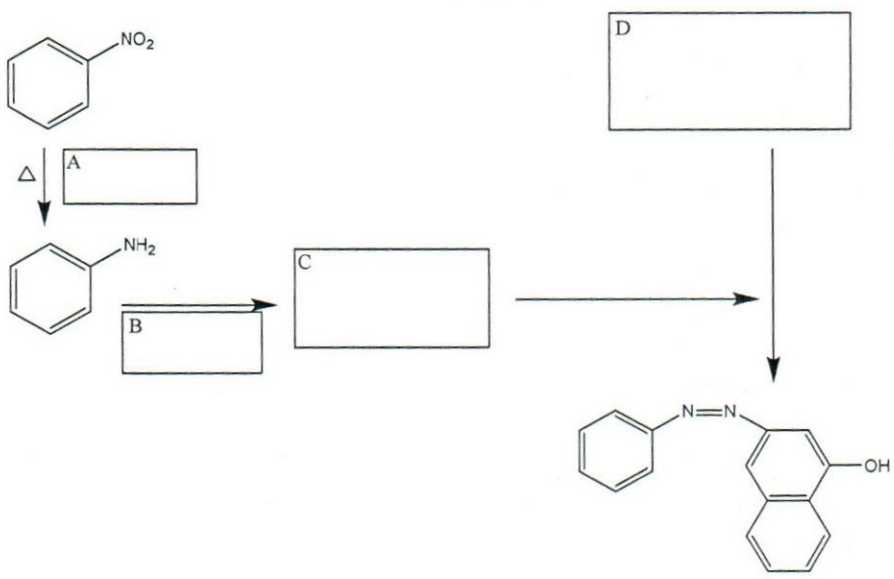
(b) $CH_3CH_2OH \longrightarrow H_2C{=}CH_2 + H_2O$

(c) $C_6H_6 + Br_2 + FeBr_3 \longrightarrow C_6H_5Br + HBr + FeBr_3$

(a) $C_2H_6 + Cl_2 \longrightarrow C_2H_5Cl + HCl$

(b) $CH_3CH_2OH + HCl \longrightarrow CH_3CH_2Cl + H_2O$

2.3. Predict the structures of (A), (B), (C), (D) and (E) (50 marks)



Question 03 **(100 marks)**

3.1 Write the products (A to F) of the following reactions. (40 marks)

(a)

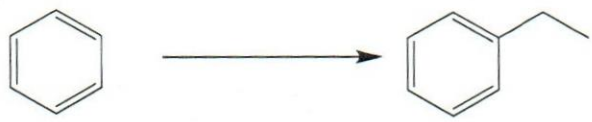
$CH_3CH_2CH_2Cl$ —1. Mg/ether→ A —2. CO_2→ B

(b)

—1. Cu/ 573K heat→ C —2. $KMnO_4$→ D

3.2 How would you synthesis the following organic compounds using any other reagents? (40 marks)

(a)



(b)

3.3 Compare and contrast the water solubility of following organic molecules by giving reasons. (20 marks)

(a) CH_3CH_2OH and CH_3CHO

(b) $CH_3CH_2CH_2CH_2CH_3$ and CH3CH2CH(CH3)2

Question 04. **(100 marks)**

4.1 Draw the Newman projection of staggered and eclipsed conformations of the following molecules. (20 marks)

a. $Cl\text{-}CH_2\text{-}CH_2\text{-}Cl$

b. $OH\text{-}CH_2\text{-}CH_2\text{-}CH_3$

4.2 Consider the molecule CH_3-CH_3 (ethane). Sketch the graph of the rotational barrier in ethane as a function of dihedral angle. (30 marks)

4.3 Draw compounds that contain the following. (20 marks)

a. A primary alcohol
b. A tertiary amine
c. Both primary and secondary alcohol
d. Quaternary carbon

4.4 Describe the following by giving examples. (30 marks)

a. Constitutional isomers
b. Stereoisomers

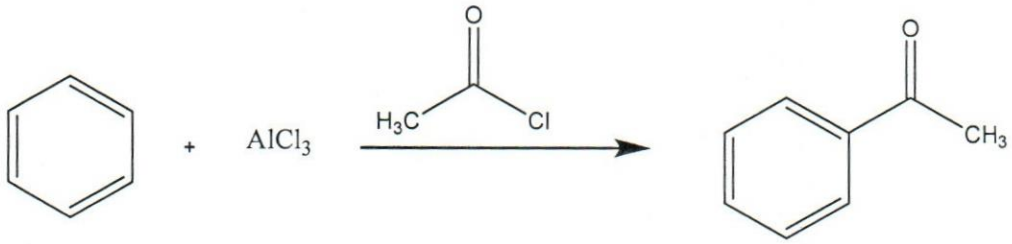
Question 05. **(100 marks)**

5.1. Briefly explain the reason for the following observations. (20 marks)

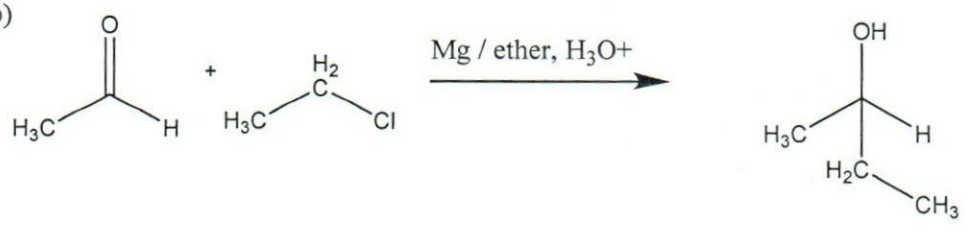
a. Isomeric alcohols boiling points follow the order:
Primary alcohol > Secondary alcohol >tertiary alcohol.
b. Solubility of ethers in water decreases from lower members to higher members.

5.2. Propose a reaction mechanism to account for the following reactions. (30 marks)

(a)



(b)

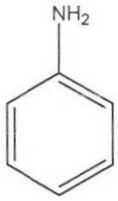


5.3. Identify the following groups and categories in to *o,p*-directors or *m*-directors. (10 marks)

(a) -OH
(b) -NH_2
(c) -COOH
(d) -NO2
(e) -CN

5.4. Draw the possible resonance structure of the following organic molecules. (20 marks)

(a) 

(b) 

5.5. Write the mechanism of dehydration of ethanol which leads to the formation of ethane. (20 marks)

Question 06 **(100 marks)**

6.1 Predict the result of the addition of hydrogen bromide to 2-methylpent-2-ene (25 marks)

6.2 Write the mechanism for the treatment of a but-2-ene with bromine (Br_2) in a chlorinated solvent ($CHCl_3$). (35 marks)

6.3 Suggest a method to differentiate $CH_3(CH)OHCH_3$ and CH_3CH_2OH organic molecule. (10 marks)

6.4 State the reaction conditions for following conversions. (30 marks)

a. $CH_2{=}CH_2 \rightarrow CH_3 — CH_3$
b. $CH{\equiv}CH \rightarrow CH_3 — CH_3$
c. $(CH_3)_2C{=}O \rightarrow (CH_3)_2CH — OH$
d. $CH_3CH_2OH \rightarrow CH_3\text{-}COOH$

CINEC CAMPUS
Beyond A Graduate

Faculty of Health Sciences

Higher Diploma in Biomedical Science

HD 1213
Anatomy
1st year 2nd Semester

End Semester SEQ Repeat Examination

1st Batch

Date : **17th January 2023**
Time : **9.00 a.m. – 11.00 a.m. (Two hours)**

INSTRUCTIONS TO CANDIDATES

- This question paper consists of **FOUR** questions.
- Answer **ALL** questions.
- You should write legibly in black or blue ink.
- You are not allowed to take out the examination papers.

Question 1 **(100 marks)**

1.1 List three main types of muscle tissues. (15 marks)
1.2 Compared three muscle types you mentioned in 1.1. (35 marks)
1.3 Names all bones in upper limbs. (15 marks)
1.4 Describe the difference between exocrine and endocrine pancreas. (35 marks)

Question 2 **(100 marks)**

2.1 Name the major cell types in alveolar epithelium and state their function. (20 marks)
2.2 Write short notes on respiratory epithelium (25 marks)
2.3 List four differences between right and left bronchi. (20 marks)
2.4 List the main layers present in heart wall (15 marks)
2.5 "Myocardium in left ventricle is thicker than the wall of right ventricle". What is the reason for that? (20 marks)

Question 3 **(100 marks)**

3.1 Draw a label diagram of a nephron. (25 marks)
3.2 Write the differences between male and female urethra. (25 marks)
3.3 Define following terms.
  3.3.1 True Ribs (10 marks)
  3.3.2 False Ribs (10 marks)
  3.3.3 Floating Ribs (10 marks)
3.4 Show the nine regions in the abdominal region by using a labeled diagram. (20 marks)

Question 4 **(100 marks)**

4.1 Name the three layers of meninges. (15 marks)

4.2 Describe a structure of a nerve trunk. (40 marks)

4.3 List the main layers present in heart wall (20 marks)

4.4 "Myocardium in left ventricle is thicker than the wall of right ventricle". What is the reason for that? (25 marks)

Library.

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1st Batch

Date	:	**17th January 2022**
Time	:	**11.00 a.m. – 12.00 p.m. (One Hour)**

INSTRUCTIONS TO CANDIDATES

- This question paper consists of **Twenty** questions.
- Answer **ALL** questions.
- **Each question, consists of Five statements** and you need to select and mark either **True (T)** or **False (F)** in each statement.
  Ex:
T	T	T	T	T
F	F	F	F	F

- You should write legibly in black or blue ink.
- You are not allowed to take out the examination papers.

1. True or false?

1. Humerus is a long bone.
2. There are eight carpal bones.
3. There are thirty-two bones in each upper limb.
4. The size of the axilla region varies with arm movements.
5. There are five metatarsal bones.

2. Regarding heart anatomy,

1. Anterior surface is mainly formed by right ventricle.
2. Fibrous pericardium is inelastic.
3. Pericardium is the thickest layer of the heart.
4. Endocardium consists of simple squamous epithelium.
5. Coronary sulcus separates the atria from the ventricles.

3. **In nasal cavity,**
   1. septum locates in the middle.
   2. there are three meatus.
   3. olfactory mucosa contains receptors for smell.
   4. mucosa contains stratified columnar ciliated epithelium.
   5. nasal septum is usually smooth.

4. **Regarding the meninges,**
   1. The dura and arachnoid maters are separated by a subdural space.
   2. Pia matter adheres to the brain.
   3. The superior sagittal sinus is formed by the falx cerebri.
   4. Arachnoid matter is the outer most one.
   5. Subarachnoid space contains cerebrospinal fluid.

5. **True or false?**
   1. Renal cortex contains pyramids.
   2. Kidneys are intraperitoneal organs.
   3. Kidneys are bean shaped organs.
   4. Apex of pyramids open directly to the minor calyx.
   5. Loop of Henle present in renal cortex.

6. **Regarding the liver,**
   1. Greater part presents in right hypochondriac region.
   2. It is associated with sub-phrenic recesses.
   3. It is associated with left triangular ligament.
   4. Bare area covered by peritoneal covering.
   5. It has four lobes.

7. **Regarding the thoracic vertebrae,**
   1. There are seven thoracic vertebrae.
   2. First thoracic vertebra is one of the atypical thoracic vertebrae.
   3. There are facets for ribs.
   4. They are smaller than lumbar vertebrae.
   5. Body is heart shape.

8. **The trachea,**
   1. contains hyaline cartilages.
   2. lies anterior to the oesophagus.
   3. lies posterior to the thyroid gland.
   4. consists of pesudostratified ciliated columnar epithelium.
   5. anterior part, covered by Trachealis.

9. **True or false regarding a human skin?**
   1. Ceruminous gland is an apocrine gland.
   2. Arrector pili are bundle of smooth muscles.
   3. Sebaceous glands are abundant in axillae.
   4. Hypodermis is a avascular layer.
   5. Epidermis contains keratinized simple squamous epithelium.

10. Regarding human excretory system,

1. Male urethra is longer than female urethra.
2. Internal urethral sphincter consists voluntary muscles.
3. Blood leaves the nephron via the efferent arteriole.
4. Cortical nephrons are the abundant type.
5. One collecting tubule connects with number of nephrons.

11. Regarding female reproductive system,

1. The ovaries are active before puberty.
2. Graafian follicle stage is the mature stage.
3. Fimbriae is the free edge of infundibulum.
4. Right ovarian vein drains in to inferior vena cava.
5. Vestibular glands secrete mucus.

12. Regarding human lungs,

1. Left lung contains only oblique fissure.
2. Inferior lobe of the left lung contains lingula.
3. Apex rises into the root of the neck.
4. Medial surface contains a hilum.
5. Right lung is smaller than the left lung.

13. The thyroid gland,

1. sometimes contains pyramidal lobe.
2. is a less vascular organ.
3. is butterfly in shape.
4. covers by a fibrous capsule.
5. consists thyroid follicles as their functional units.

14. True or false?

1. Ureters line with transitional epithelium.
2. Ureters open to the lateral wall of the urinary bladder.
3. Empty urinary bladder consists rugae.
4. Trigone is a smooth folded area in the urinary bladder.
5. Detrusor muscle presents in the wall of urinary bladder.

15. Spermatic cord contains,

1. penile urethra.
2. ductus deferens.
3. pampiniform plexus.
4. testicular artery.
5. prostatic urethra.

16. Regarding neuroglial cells,

1. Astrocytes are the largest neuroglia.
2. Astrocytes are analogous to Schwann cells of peripheral nervous system.
3. Microglial cells are the smallest neuroglia.
4. Ependymal cells produce cerebrospinal fluids.
5. Schwann cells produce myelin sheath.

17. Regarding cranial nerves,

1. Olfactory nerve is a sensory nerve.
2. Oculomotor nerve is the fourthe cranial nerve.
3. Facial nerve contains both sensory and motor fibres.
4. Vestibulocochlear nerve is a sensory nerve.
5. Vagus is the 10^{th} cranial nerve.

18. True or false?

1. The squamous epitheliums are lining epithelia.
2. Sub mandibular glands are sitiated just below the external acoustic meatus.
3. Salivary glands are surrounded by a fibrous capsule.
4. Oesophagus contains only skeletal muscles.
5. Stomach has two curvatures.

19. Regarding the bronchial tree,

1. Left bronchus is shorter than the right bronchus.
2. Right bronchus is wider than the left bronchus.
3. Right bronchus divides into two branches.
4. Alveoli are blind ends of the bronchial tree.
5. Primary bronchi are formed at the 7^{th} thoracic vertebral level.

20. Regarding vagina,

1. It has no secretary glands.
2. It lines with simple squamous epithelium.
3. Surface is kept moist by cervical secretions.
4. Middle layer of the wall consists of smooth muscle.
5. Inner lining forms rugae.