UNIVERSITY OF JOHANNESBURG

PROGRAM	:	*BIOKINETICS*
SUBJECT	:	**ANATOMY AND PHYSIOLOGY 2**
CODE	:	**AAP01Y2**
DATE	:	JANUARY SUPPLEMENTARY EXAMINATION ? JANUARY 2018
DURATION	:	180 MINUTES
WEIGHT	:	50 : 50
TOTAL MARKS	:	140

EXAMINERS	:	T. DUKHAN S. ISHWARKUMAR E. SWANEPOEL
MODERATOR	:	S. NALLA I. PATEL
NUMBER OF PAGES	:	14 PAGES

INSTRUCTIONS	:	QUESTION PAPER MUST BE HANDED IN

REQUIREMENTS	:	1 X MULTIPLE CHOICE ANSWER SHEET 4 X EXAMINATION SCRIPTS

INSTRUCTIONS TO CANDIDATES:

1. THIS PAPER CONSISTS OF 5 SECTIONS.
2. SECTION A MUST BE COMPLETED ON THE MULTIPLE CHOICE ANSWER SHEET PROVIDED.
3. SECTIONS B TO E MUST EACH BE ANSWERED IN A SEPARATE EXAMINATION SCRIPT PROVIDED.
4. MARK ALLOCATION FOR SECTION A: 1 MARK PER QUESTION.
5. MARK ALLOCATION FOR SECTIONS B TO E: ½ MARK PER FACT UNLESS INDICATED OTHERWISE.
6. THIS QUESTION PAPER MUST BE RETURNED WITH ALL YOUR EXAMINATION ANSWER SCRIPTS.

SECTION A: MULTIPLE CHOICE QUESTIONS

Choose the most correct option that best completes the statement or answers the questions below.

Multiple choice questions removed

SECTION A SUBTOTAL: 40

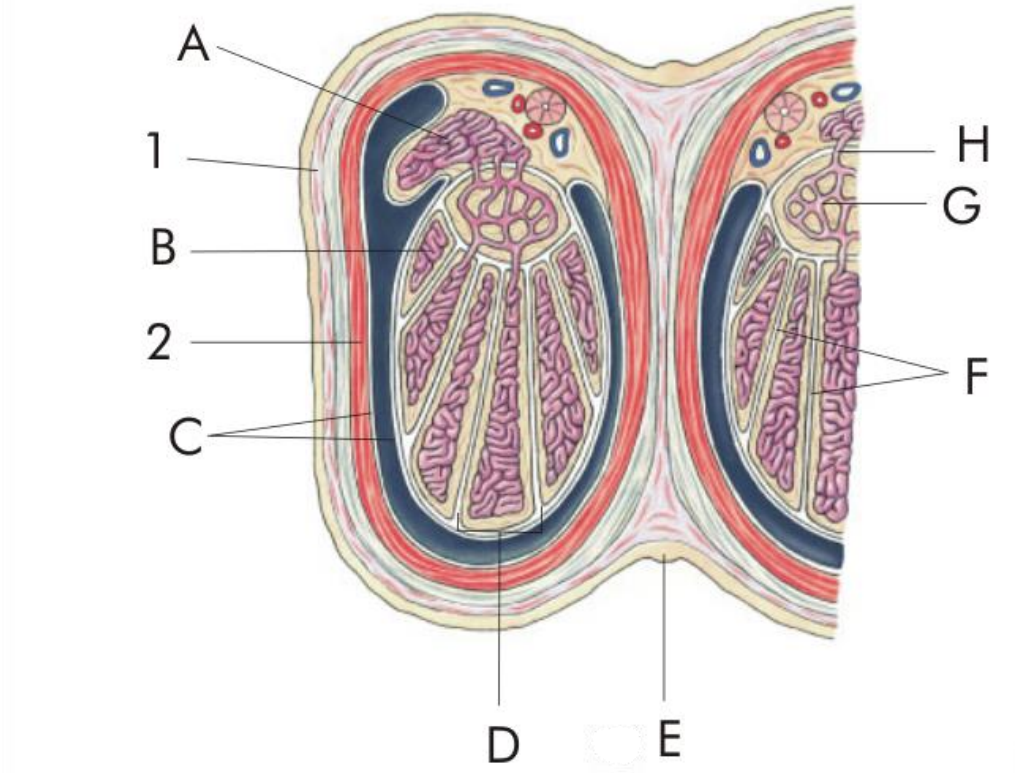
SECTION B: ANATOMY (E. Swanepoel)

(Female and Male Reproductive systems)

QUESTION 1

Refer to Figure 1 and answer the following questions:

FIGURE 1



1.1	Give an appropriate heading for this diagram.	(½)
1.2	Provide labels for structures A to G.	(3½)
1.3	Name the actions of muscles 1 and 2 respectively.	(1)
		[5]

QUESTION 2

2.1	List and briefly describe the ligaments keeping the uterus in place within the abdomino-pelvic cavity.	(4)
2.2	Describe the macroscopic anatomy of the penis.	(4)
2.3	List the parts of the uterine tubes. Include in your answer where fertilization normally occur.	(2)
		[10]

SECTION B SUBTOTAL: 15

SECTION C: ANATOMY (S. ISHWARKUMAR)

(Lymphatic system and Digestive system)

QUESTION 1

1.1. Name the three classes of lymphocytes that circulate in the blood and provide the main function of each class. (3)

1.2. Explain how a lymphatic capillary differs from a blood capillary. (2)

[5]

QUESTION 2

Describe the macro-anatomy of the pancreas (includes its location, relations, divisions, ducts and blood supply). **[5]**

QUESTION 3

Write short notes on the histology of the oesophagus. **[4]**

QUESTION 4

Name the two glandular organs associated with the small intestine.

[1]

SECTION C SUBTOTAL: 15

SECTION D: PHYSIOLOGY (I. Patel)

(Female & Male Reproductive, Fluids, Exercise, Thermoregulation)

QUESTION 1:

1.1 Describe the three processes that occur as a result of oocyte activation. (3)

1.2 Provide **TWO** key features of each trimester of gestation (3)

1.3 What is the function of the chorion? (1)

[7]

QUESTION 2:

2.1 List the primary regulatory hormones that affect fluid and electrolyte balance and provide **TWO** functions of each. (4½)

2.2 List and briefly describe the **THREE** categories of acids found in the body. (3)

2.3 What is the primary cause of respiratory alkalosis? (½)

[8]

QUESTION 3:

3.1 Define and explain cardiovascular drift. (7)

3.2 Explain what is meant by “repaying oxygen debt” after exercise. (3)

[10]

QUESTION 4:

4.1 Explain the physiological mechanisms used by the body to lower core temperature when environmental temperature is high. (6)

4.2 Explain the cause and effect of each of the following on normal body temperature:

4.2.1 Heat exhaustion (2)

4.2.2 Heat stroke (2)

[10]

SECTION D SUBTOTAL: 35

SECTION E: PHYSIOLOGY (T. Dukhan)

(Nervous system, Lymph, Immunity, Digestion and Metabolism)

QUESTION 1: Nervous system

1.1 Describe the effect of the neurotoxin tetrodotoxin on the functioning of the neuromuscular junction. (1½)

1.2 Explain why axonal regeneration is unlikely to occur in the central nervous system. (3)

1.3 Describe the body's natural pain-relieving or analgesic system. (4)

[8]

QUESTION 2: Lymph

Using your knowledge of the forces that drive lymph circulation, describe, in detail, two possible cause of oedema. (3½)

[3½]

QUESTION 3: Immunity

3.1 Discuss the importance of antibodies in the immune response by naming the five antibody classes and indicating one specific role of each class in immunity. (5)

3.2 Discuss the activation and process of clonal expansion in cytotoxic T cells. (4)

[9]

QUESTION 4: Digestion

Describe the absorption of lipids from the intestinal lumen. **[7]**

QUESTION 5: Metabolism

Describe how the metabolism of one molecule of glucose can lead to the generation of 36 molecules of ATP. **[7]**

SECTION E SUBTOTAL: 35

TOTAL MARKS: 140