AEQUAM SERVARE MENTEM

SASTRI COLLEGE

GRADE 9

NATURAL SCIENCES

MARCH 2020

TIME: 1 HOUR **MAX. MARKS: 70**

EXAMINER: MISS S. GANGARAM

MODERATORS: MRS R.C. JIVAN

INSTRUCTIONS AND INFORMATION

NB: This paper consists of **2 sections** typed on **7 pages**.

1. Answer **all** the sections and all the questions.
2. **RULE OFF AFTER EACH QUESTION**.
3. Number the answers correctly according to the numbering system used in this question paper.
4. You are requested to follow the instructions of the questions or you will be penalized.
5. Write neatly and legibly.

SECTION A

QUESTION ONE

1.1 Various possible answers are provided for each question. Write only the letter corresponding to the correct answer next to the number.

1.1.1. The control centre of the cell is the...

A] cell membrane
B] nucleus
C] mitochondrion
D] vacuole

1.1.2. Which of the following sets of features is common to both plant and animal cells?

A] cell membrane, cell wall, nucleus
B] cytoplasm, nucleus, cell membrane
C] cytoplasts, nucleus, cell membrane
D] cell membrane, cell wall, chloroplasts

1.1.3. The part of the microscope which holds the ojectives is the...

A] condensor
B] ocular
C] diaphragm
D] rotating nose piece

1.1.4. The blood vessels that carry deoxygenated blood from the heart to the lungs is the...

A] aorta
B] pulmonary vein
C] pulmonary artery
D] superior vena cava

1.1.5. During human reproduction, the fertilized egg is embedded in the...

A] placenta
B] ovary
C] fallopian tube
D] uterus lining

[5x2=10]

1.2. Give the correct biological term for each of the following descriptions. Write only the term next to the relevant question number.

1.2.1. Stage in the human life cycle when sexual organs mature for reproduction.
1.2.2. Blood component responsible for healing wounds.
1.2.3. Organ responsible for filtering the blood.
1.2.4. Components in the skeletal system that joins bone to bone.
1.2.5. Protein that carries oxygen in red blood cells.

[5]

1.3. The statements in column A are the definitions of the concepts in Column B. Write down 1.1.3 – 1.1.5 and next to each write down ONLY the letter of the correct answer from column B.

	COLUMN A	COLUMN B
1.3.1.	The removal of undigested material from the digestive tract via the anus.	A : dehydration B : egestion C : vacuole D : ingestion E : cytoplasm F : gaseous exchange G : urination H : breathing
1.3.2.	The loss of too much water by the body.	
1.3.3.	Inhalation of oxygenated air and exhalation of carbon dioxide from the lungs	
1.3.4.	Diffusion of O_2 from the lungs into the tissues and removal of CO_2 from the tissues to the lungs.	
1.3.5.	Organelle responsible for the turgidity of a cell.	

[5]

1.4. A nurse at a local hospital takes the temperature of a patient every two hours. Her findings are recorded in the table below.

Time of the Day	10:00	12:00	14:00	16:00
Temperature (°C)	37	37.2	38	38.6

1.4.1. Provide a suitable hypothesis for the above investigation. (2)

1.4.2. Identify the following:

a) Independent variable (1)

b) Fixed variable (1)

1.4.3. Using the information in the table above, construct a LINE graph to illustrate the results. Draw your graph on the graph sheet provided at the back of your answer book. (5)

1.4.4. Use the graph to determine the temperature of the patient at 11:00. (1)

[10]

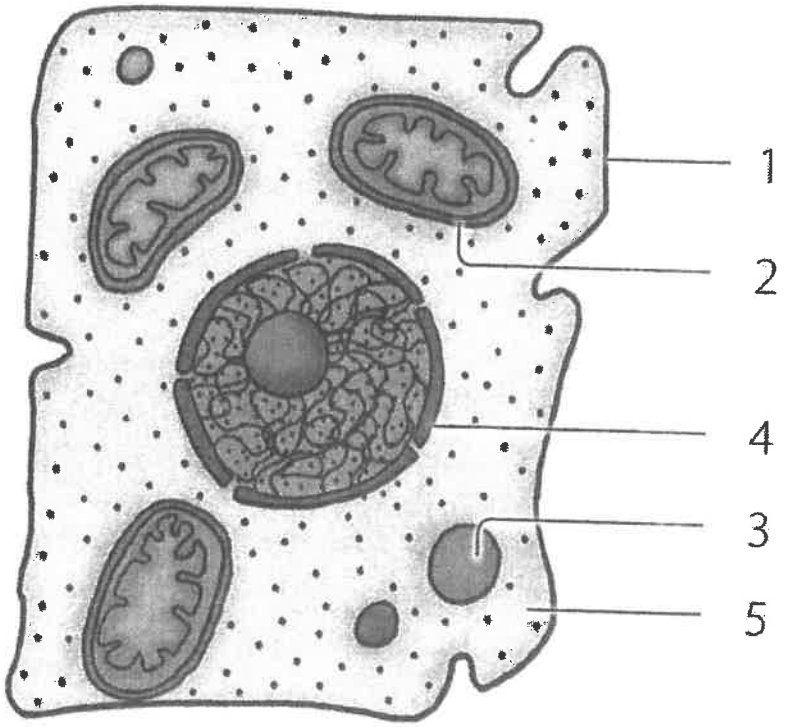
SUB-TOTAL QUESTION 1: [30]

TOTAL SECTION A: [30]

SECTION B

QUESTION TWO

2.1. Refer to the diagram of a cell below and answer the questions that follow.



2.1.1. Provide a suitable heading for the diagram above. (1)

2.1.2. Identify the following:

a) 1 (1)

b) 5 (1)

2.1.3. State the function of the parts of the cell labeled:

a) 2 (1)

b) 4 (1)

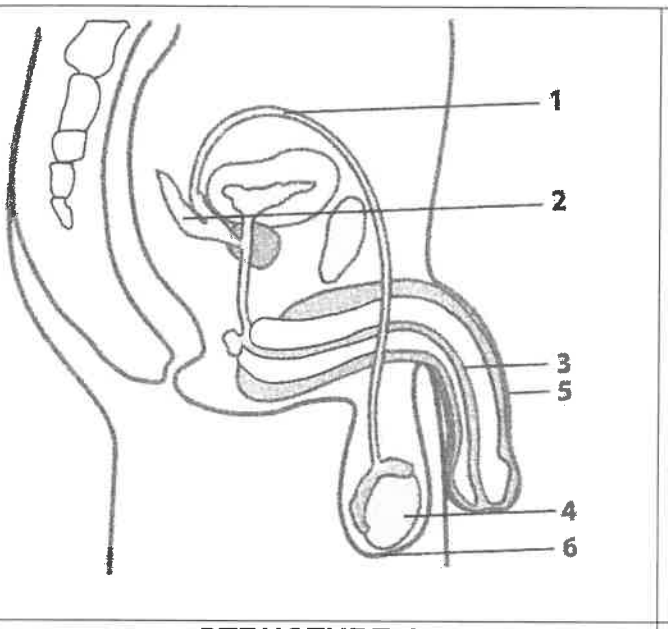
2.1.4. Tabulate TWO differences between plant and animal cells. (5)

[10]

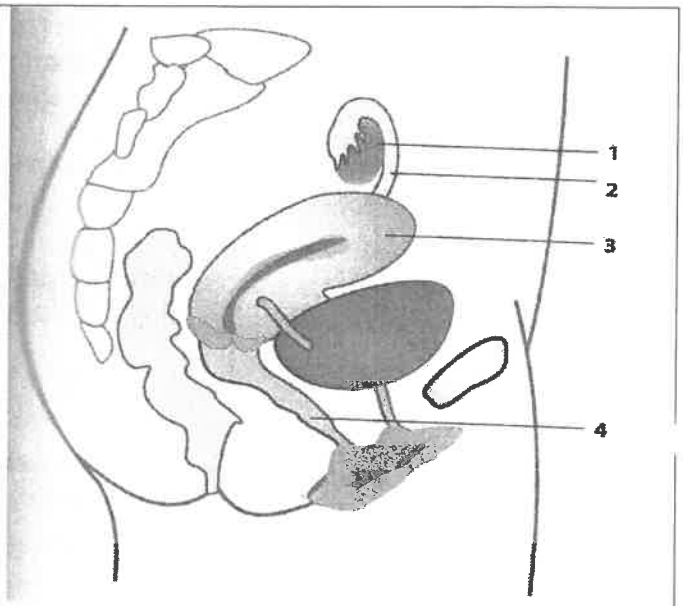
SUB-TOTAL QUESTION 2: [10]

QUESTION THREE

3.1. Study the diagrams of the reproductive structures below and answer the questions that follow.



STRUCTURE A



STRUCTURE B

3.1.1. Identify Structure A and Structure B. (2)

3.1.2. Label the part marked 5 in Structure A. (1)

3.1.3. Give a reason why the testes hang outside the body. (2)

3.1.4. The part labelled 3 in Structure B is the uterus. What is its function? (1)

3.1.5. Label the part marked 1 in Structure B. (1)

3.1.6. State the NUMBER and NAME of the part in which fertilisation takes place in Structure B. (2)

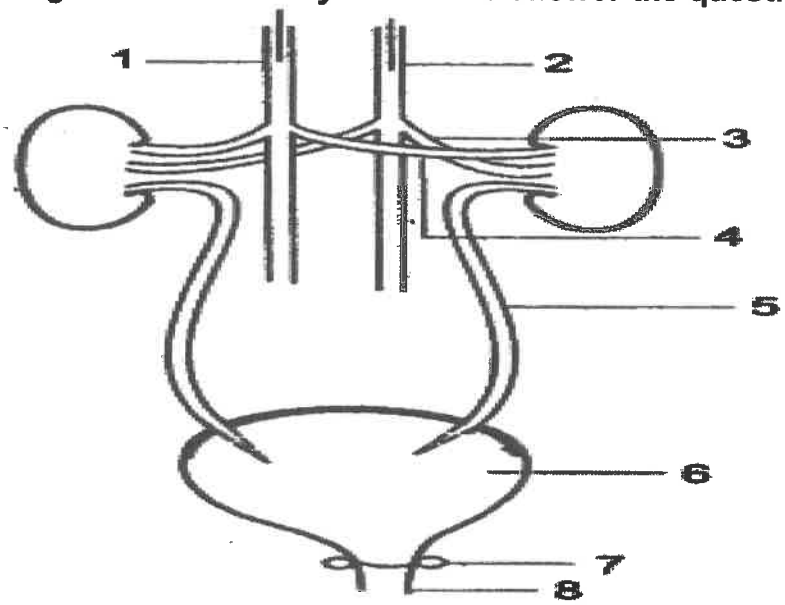
3.1.7. Give ONE reason why condoms are a popular method of contraception . (1)

[10]

SUB-TOTAL QUESTION 3: [10]

QUESTION FOUR

4.1. Refer to the diagram of the kidney below and answer the questions that follow.



4.1.1. State the function of the kidney (1)

4.1.2. Name the body system to which the kidneys belong. (1)

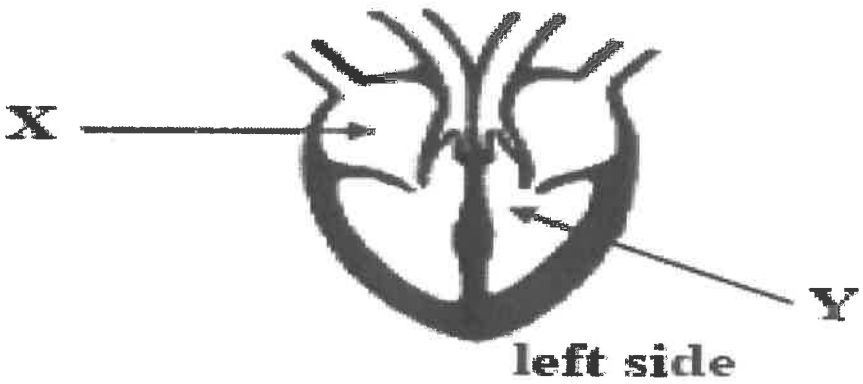
4.1.3. State the NUMBER and NAME of the part in which:

a) Urine leaves the kidney. (2)

b) Urine leaves the body. (2)

[6]

4.2. Refer to the diagram of the heart below.



4.2.1. Complete the table by writing down the letters (a to d) in your answer book and ONLY your answer next to it.

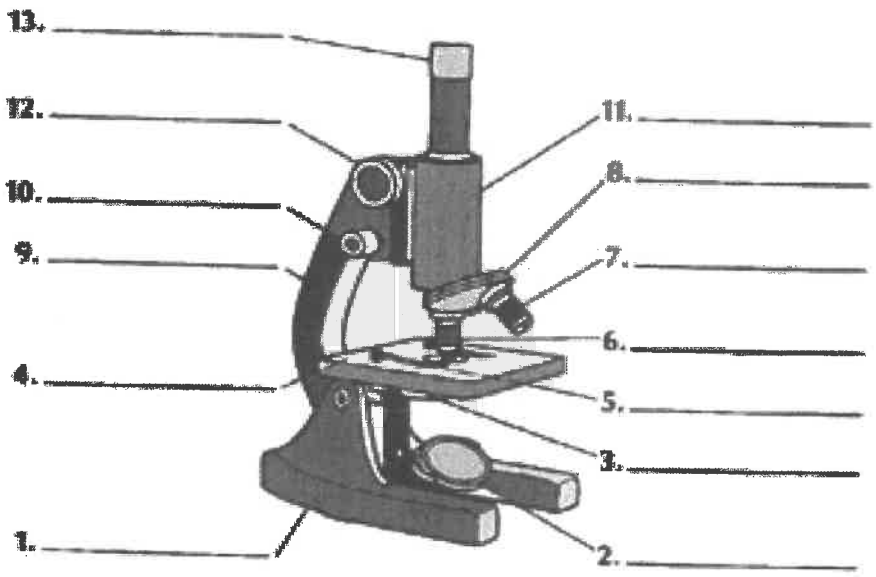
	X	Y
Name of chamber	(a)	(b)
Oxygenated/deoxygenated blood	(c)	(d)

[4]

SUB-TOTAL QUESTION 4: [10]

QUESTION FIVE

5.1. You are given a microscope to study as shown in the diagram below. Answer the questions that follow.



5.1.1. Provide labels for the following parts:

a) 7 (1)

b) 11 (1)

5.1.2. State the function of part labelled 10. (1)

5.1.3. You are required to observe a plant tissue under a microscope, the magnification must be 400 x. Which combination of lenses would you use to provide this magnification? Write down only the LETTER of the correct answer in your answer book.

A) 40 x Objectives and a 10 x eyepiece

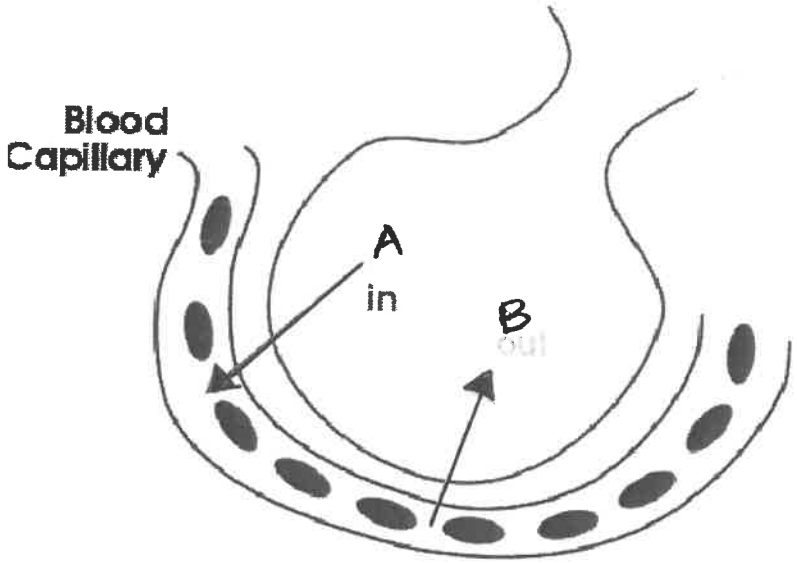
B) 20 x Objectives and a 40 x eyepiece

C) 200 x Objectives and a 200 x eyepiece

D) 300 x Objectives and a 100 x eyepiece (2)

[5]

5.2. Refer to the diagram below and answer the questions that follow:



5.2.1. Provide a suitable caption for the structure in the diagram above. (1)

5.2.2. Identify the organ in the human body in which this structure is found? (1)

5.2.3. Name the process which takes place within this structure. (1)

5.2.4. Identify the gases at:

a) A (1)

b) B (1)

[5]

SUB-TOTAL QUESTION 5: [10}

TOTAL SECTION B: [40]

GRAND TOTAL: 70 MARKS