

Arab republic of Egypt  
Ministry of education  
Egyptian general secondary certificate in Sudan wear 2017  
First session

Biology for general secondary

time: 3 hours

**Answer (4) question only:**

**1<sup>st</sup> question:**

**A) choose the correct answer from the following and write only the chooses words in your answer paper :**

1-the ligaments which connect between humerus bone and fibula is:

- a- lateral ligaments                      b- medial ligaments  
C-anterior cruciate ligaments              d-posterior cruciate ligaments

2- Anti-codon in t-RNA which responsible for transport methionine amino acid is: a -UGA              b-UAG              c-UAC              d-AUG

3- The number of chromosomes reduced into the half during formation of sperms in ..... phase

- a- Multiplication      b- Growth      c- Maturation      d- Metamorphosis

4- Protein responsible for inhibit the lymphatic cells is:

- a- Lymphokines      b-cytokines      c- chemokines      d-interleukins

5- the hormone which affect the kidney action is:

- a-TSH                      b-ADH                      c- FSH                      d-LH

a- The scientist which isolate the substance responsible for bacterial transformation is: a-Griffith      b- Hershy                      c- Avery                      d- Franklin

**B) What is the different between each of the following:**

1- Restriction enzyme and modification enzyme

2- Micropyle in ovule and micropyle in seeds

**c) Answer the following:**

1- Draw with complete labels the structure of antibody

2-molecule of DNA consists of 200 turn and contain 600 nucleotides of guanine.

Calculate a- number of nucleotides in this DNA molecule

b- Number of thymine nucleotides

**2<sup>nd</sup> question:**

**(A) Write the scientific term for each of the following statements:**

1-Bony process attached with the spine ring of vertebrae and it directed downwards

2-a tissue consists of separated cells present in pancreas and differentiates into

d- cells of Graafian follicle

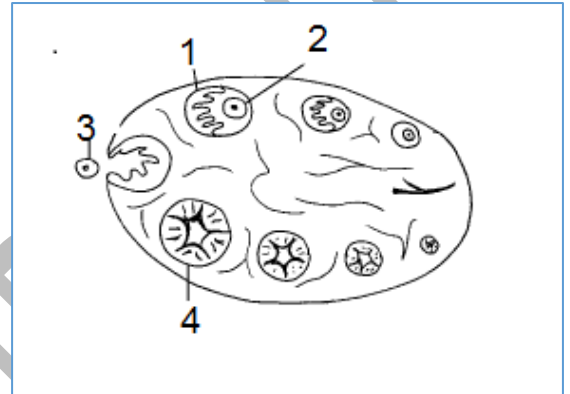
2- Draw a complete labeled diagram showing the male gametes in man

**4<sup>th</sup> question:**

(a) To what extent are the following statements right? Explain your answer?

- 1- Relaxation of the muscle needs energy
- 2- All hormones are proteinic substances
- 3- Number of types of t-RNA equals number of amino acids
- 4- The secretion of progesterone hormone increases in pregnant women with dizygotic twins than women pregnant with monozygotic twins

(b) The next figure explains a diagram of a section in the ovary of an adult female in different stages. In light of this, answer the following:



- 1- Write the name of the hormone responsible for formation of number (1) and (4)
- 2- How many chromosomal groups are in cell number (3)? and why?
- 3- Draw a diagram showing the thickness of the endometrium during growth of number (1) and during formation of number (4)

(c) Answer the following:

1- Write short note about:

- a) The reproductive capacities among organisms
- b) Tyloses

2- The concept of replication differs from the concept of transcription

**5<sup>th</sup> question:**

(a) Compare between each two of the following:

- 1- Antheridia and anther (from the place and the importance)
- 2- The genome in prokaryotic and eukaryotic
- 3- The 1<sup>st</sup> vertebrae and the last vertebrae of the vertebral column (from place and size)

(b) What will happen in these cases:

- 1- Absence of beta cells from Langerhans islets
- 2- Inability of activated TH to secrete cytokines
- 3- The large ribosomal subunit cannot bind with the small ribosomal subunit during protein synthesis
- 4- Presence of two testes in the abdominal cavity in an adult male

(c) Mention the role of the following:

- 1- releasing factor    2- phenols    3- thymosin
- 4- petals    5- lymphatic toxins