Sohag University

Faculty of science
Zoology Department

First year pharmacy
Exam of Zoology (Cell Biology)
Date: 18/1/2016
Total Time: 2 hrs

Answer the following questions: (80 marks)

Question (1) Correct the bold-underline words in the following sentences (24 = 4 Marks for each)

a- The phosphate group in the DNA molecular structure connects the two pentose sugars in the carbon atoms number **1 and 2.**

b- **Cadherin** is the transmembrane linker protein between the cytoskeleton and the lamina propria in the hemidesmosome cell junction.

c- The main globular protein composes the microfilaments in the cells is **keratin** protein.

d- The inner membrane of the nuclear envelope is surrounded by **vimentins** intermediate filaments from the cytoplasmic side.

e- The **chromosomes** separated through the anaphase II in the meiotic division to produce single stranded chromosomes.

f- In the molecular structure of DNA, the type of the bond between the pentose sugar and phosphate group is **hydrogen bonds.**

Question (2) Choose the correct answers for the following sentences (18 = 3 Marks for each)

a- One of the differences between RNA and DNA molecular structure is that, the uracil nitrogenous base should be exchanged with ……
(Adenine – Thymine – Cytosine – Guanine)

b- The cell junction between the two cytoskeleton of two neighbor cells called……
(Desmosome – Hemidesmosome – Gap junction – Adherens junction)

c- The Leptotene stage takes place in the…… from the meiotic division.
(Prophase II – Metaphase I – Interphase I – Prophase I)

d- The transmembrane linker in the case of the Adherens junctions is……
(Actin filaments – Cadherin filaments – Keratin filaments – Desmin filaments)

e- One of the following protein filaments consider as a type of Microfilaments ……
(Keratin filaments – Actin filaments – Desmin filaments – Vimentin filaments)

f- In the structure of the nucleolus the part which composed from active DNA is……
(Pars fibrosa – Pars granulose – Fibrilla centers – Nucleolar organizing)

Question (3) Write short notes "Supporting your answer with drawing" on the following:

a- The molecular structure of the Golgi apparatus. **(17 Marks)**
b- The molecular structure of the Mitochondria. **(21 Marks)**

Best wishes,,,,,,,,,,,,,,,,,Dr. Aziz Awaad

Sohag University

Faculty of science

1st year pharmacy
(تخلفات لائحة حديثة) cell Biology
Zoology Department
Date: 16/02/2016
Total Time: 2 hrs

Answer the following questions: (80 marks)

1-Correct the bold-underlines words (20 marks/4 marks each)

a) The **inner surface** of the nuclear envelope contains ribosomes.
b) The chromosomal crossover occurs in the **prophase II** from the meiotic division.
c) The transmembrane linker in the desmosome junctions is **integrin protein**.
d) **The smooth endoplasmic reticulum** has several ribosomes on the outer side of its surfaces.
e) **Lysosomes** are referred as "Powerhouse" of the cell, since they produce 95% of the ATP molecules in the animal cells.

2-Complete the following sentences (30 marks/2 marks each space)

a) The prophase I in the meiotic division including the following stages:-
…….. ……..
…….. ……..
……
b) The DNA molecule composed from ……, ……., and ……
c) In the Golgi apparatus, the flattened cisternae located closest to the rough endoplasmic reticulum represent the ……. Where, the cisternae located away from the rough endoplasmic reticulum represent the …….
d) The cell anchoring junctions including ……., ……., …….
e) The types of the cytoskeleton proteins include the following:- ……., ……., and microfilaments.

3-Write in details with drawing about the following:-

1-Molecular structure of the Mitochondria. (15 marks)
2- Molecular structure of Golgi apparatus. (15 marks)

Best Wishes
Dr. Aziz Awaad