



**All questions to be answered:**

**All questions in one page:**

- 1) Give an account on cell cycle? (10 degrees)
- 2) Give definition: (3 degree each)
  - Mutarotation?
  - Isomerism?
  - Zymogens?
  - Saponification?
  - Denaturation of protein?
- 3) Give short notes on: (5 degrees each)
  - Eicosanoids ?
  - Importance of essential fatty acids?
  - Enzyme inhibitors?
  - Types of DNA?
  - Post-transcriptional modification of mRNA?
  - Post-translational modification?
  - Enzyme specificity?
- 4) Give structural formula for the followings? (5 degrees each)
  - Two basic amino acids?
  - Cholesterol?
  - Sorbitol?

*GOOD LUCK*

Aswan University

Faculty of Medicine

Dep.of Medical Physiology

Tuesday, 23/5/2017

Final Exam for First Year medical Students

Time: 3 h.

Marks: 150

The Examination is composed of **TWO** pages.

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**Answer all the following questions:**

**1- Cardiovascular (1):** **30**

- a- Describe the phases of the action potentials in the cardiac muscle? 10
- b- Give an account on the **T** wave of the ECG and **list Three** causes of its abnormality? 10
- c- Mention with explanation the relation between the arterial blood pressure and the kidney? 10

**2-Cardiovascular (2):** **28**

- a- Define respiratory sinus arrhythmia and mention its mechanisms? 10
- b- Explain why the pulmonary resistance to blood flow is low? 10
- c- Discuss the effects of gravity on the venous pressure? 08

**3- Respiratory system:** **26**

- a- Discuss factors affecting the gas diffusion across the respiratory membrane? 10
- b- Write an account on chloride shift and its significance? 10
- c- Define pulmonary surfactants and explain their functions? 06

**4- Gastrointestinal:** **20**

- a- Compare between secretin and cholecystokinin hormones (stimulus of release and functions)? 10
  - b- Mention the stimulus for release and functions of gastrin hormone? 05
  - c- Briefly discuss **FIVE** functions of bile salts? 05
-

**5- Blood:**

**15**

- a- Write an account on **FIVE** functions of plasma proteins? 05
- b- Explain the extrinsic mechanism of blood coagulation? 05
- c- Mention the process of fate of aged red blood cells? 05

**6-Nerve and Muscle:**

**13**

- a- Compare between isometric and isotonic muscle contractions? 06
- b- Describe the mechanisms of conduction of the action potential? 07

**7- Autonomic Nervous System:**

**10**

Give an account on **FIVE** functions of:

- a- The vagus nerve? 05
- b- The sympathetic supply to the head and neck? 05

**8-Biophysics:**

**08**

Discuss the types of intracellular communication?

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Good Luck .Prof.Mahmoud Raafat and Exam Committee.



Aswan University

Final Exam of Cytology & General  
Histology for 1<sup>st</sup> Year students



Faculty of Medicine  
Department of Histology

Date: 20- 8 -2017

Number of Exam Pages: 8

Time allowed: 2hrs

I. Give the histological differences between the following structures? ==> (20Marks)

I.1. Blood capillaries and lymphatic capillaries

(4 Marks)

Blood capillaries	Lymphatic capillaries

I.2. Cardiac muscle fibers and smooth muscle fibers

(4 Marks)

Cardiac muscle fibers	Smooth muscle fibers

**I.3. Unilocular and multilocular fat cells****(4 Marks)**

<b>Unilocular fat cells</b>	<b>Multilocular fat cells</b>

**I.4. Medium sized artery and medium sized vein.****(4 Marks)**

<b>Medium sized artery</b>	<b>Medium sized vein</b>

**I.5. Protoplasmic and fibrous astrocyte.****(4 Marks)**

<b>Protoplasmic astrocyte</b>	<b>Fibrous astrocyte</b>



**II- Fill in the blanks:**

**(17 Marks)**

**II.1.Enumerate the types of secondary lysosomes.**

**(1.5Mark)**

- a)- .....
- b)- .....
- c)- .....

**II.2.Enumerate the ultrastructural components of Golgi apparatus.**

**(1.5Mark)**

- a)-.....
- b)-.....
- c)- .....

**II.3.Enumerate all types of neuroglia.**

**(2 Marks)**

- a)-.....
- b)-.....
- c)- .....

**II.4.Enumerate the types of simple epithelium.**

**(2 Marks)**

- a)-.....
- b)-.....
- c)- .....
- d)-.....

**II.5.The cardiac muscle fibers produce .....hormone.**

**(1 Mark)**

**II.6.The ..... is the secretory apparatus of the cell, and composed of interconnected stacks of flattened crescent- shaped cisternae.**

**(1 Mark)**

**II.7. The .....is produced by the Golgi apparatus, and considered as the stomach of the cell.**

**(1Mark)**

**II.8.The ..... is a single membrane-bound organelle, and arises by fission or by pinching off from the endoplasmic reticulum.**

**(1Mark)**

**II.9. The .....are non-membranous organelles, and considered as the factory of protein synthesis in the cell.**

**(1Mark)**

**II.10. Zellweger syndrome is an inherited disease, which caused due to .....**  
.....  
.....  
.....

**(1 Mark)**

**II.11.Enumerate the cellular elements in loose connective tissue.**

**(2.5 Marks)**

- |          |           |
|----------|-----------|
| 1)-..... | 5)- ..... |
| 2)-..... | 6)- ..... |
| 3)-..... | 7)- ..... |
| 4)-..... | 8)- ..... |

**II.12.Enumerate the types of granular leucocytes.**

**(1.5 Marks)**

- 1)-.....
- 2)- .....
- 3)-.....
- 

**III- Choose the correct answer:**

**(20 Marks, One mark each)**

**III. 1.The prokaryotic cells are characterized by:**

- a. Have histones.
- b. Have nuclear membrane.
- c. Have membranous organelles.
- d. None of the above.

**III. 2.Concerning the cytoplasmic organelles:**

- a. Each organelle carries out specific metabolic activity within the cytoplasm.
- b. Are membrane-bound or membrane-less living cytoplasmic structures.
- c. Serve as transportation vehicles for intracellular substances.
- d. Both a and b.

**III. 3.Concerning the microtubules and microfilaments:**

- a. Maintain cell shape and organization of cells.
- b. Participate in cell division.
- c. Facilitate intracellular movement.
- d. All of the above.

**III. 4.Concerning the proteasomes:**

- a. Are a non-membranous barrel-shaped structures.
- b. Are functioning in degradation of miss-folded proteins.
- c. Each is formed of four stacked protein rings with a central hollow core and a cap at each end.
- d. All of the above.

**III. 5. Reticular fibers have the following characters:**

- a. Are argyrophilic fibers.
- b. Form tendons.
- c. Can be stained with Sudan black.
- d. All of the above.

**III. 6. In granulopoiesis, specific granules start to appear in the stage of:**

- a. Myelocytes.
- b. Promyelocytes.
- c. Metamyelocytes.
- d. Mature granulocytes.

**III. 7. Polycythemia means:**

- a. Variation in the size of RBCs.
- b. Variation in the shape of RBCs.
- c. Variation in the shape and size of RBCs.
- d. None of all.

**III. 8. Plasma cells have one of the following characters:**

- a. A cart-wheel eccentric nucleus.
- b. Numerous lysosomes.
- c. Acidophilic cytoplasm.

**III. 9. The percentage of reticulocytes in normal blood:**

- a. Not less than 10%.
- b. Less than 1-2%.
- c. Variable.
- d. 60-70%.

**III.10. Type II collagen is present in:**

- a. White fibro-cartilage.
- b. Hyaline cartilage.
- c. Matrix of bone.
- d. Basal lamina.

**III. 11. Intrvertebral disc is formed of:**

- a. Hyaline cartilage .
- b. White fibro-cartilage.
- c. Yellow elastic cartilage.
- d. All of above.

**III. 12. Which of the following is responsible for secretion of tropocollagen?**

- a. Plasma cell.
- b. Macrophage.
- c. Fibroblast.
- d. Adipocyte.

**III. 13. Actual bone cells which embedded in the bone matrix are:**

- a. Osteoblasts.
- b. Osteocytes.
- c. Osteoclasts.
- d. Osteogenic cells.



**III.14. What is called a low resistance junction?**

- a. Osteoblasts.
- b. Osteocytes.
- c. Osteoclasts.
- d. Osteogenic cells.

**III.15. Stratified squamous non keratinized epithelium can be found in:**

- a- Trachea.
- b- Urinary bladder.
- c- Esophagus.
- d- Uterus.

**III.16. Multipolar neurons are the following EXCEPT:**

- a- Pyramidal cells.
- b- Purkinje cells
- c- Stellate cells.
- d- Schwann cells.

**III.17. Nissl granules are present in the cytoplasm of:**

- a. Neuroglial cells.
- b. Neurons.
- c. Plasma cells.
- d. Eosinophils.

**III.18. Serous glands include:**

- a. Parotid gland.
- b- Oesophageal glands.
- c- Goblet cells.
- d- Sebaceous glands.

**III.19. Which tunica contains circularly arranged layers of smooth muscle cells?**

- a. Tunica adventitia.
- b. Tunica interna
- c. Tunica media.
- d. Tunica intima.

**III.20. The wall of I.V.C. is characterized by:**

- a- Well a developed internal elastic lamina. b- Well-developed media.
- c- A layer of longitudinal smooth muscle fibers in adventitia.
- d- A layer of longitudinal smooth muscle fibers in the media.

**IV- Answer with True (T) or False (F): (15 Marks, One mark each)**

- 1- Smooth muscle fibers are striated like skeletal muscle fibers. ( )
- 2- Special stain for myelin sheath is PAS stain. ( )
- 3- The myelin-forming cells within the central nervous system is called astrocytes. ( )

- 4-Oligocytothemia means a decrease in the number of RBCs. ( )
- 5- Salivary glands are merocrine while Sebaceous glands are apocrine. ( )
- 6-Vasa vasorum are found in the tunica Adventitia of a large blood vessel. ( )
- 7- Macula adherence is important in intercellular communication. ( )
- 8- Taste bud is an example of neuroepithelium. ( )
- 9- Sweat glands are simple straight tubular glands. ( )
- 10- Fat is considered as non-membranous organelle. ( )
- 11-The intercalated discs are structures found in both cardiac and skeletal muscle fibers. ( )
- 12- Internal elastic lamina is present and clear in the aorta. ( )
- 13- Endothelial cells of blood sinusoids are separated by large intercellular spaces. ( )
- 14- Monocytes in the blood are precursors of macrophages. ( )
- 15- Blood platelets are true cells. ( )

**V- Only with diagram illustrate the structure of fibroblast? =====>(3 Marks)**

\*\*\*\*\* ( انتهت الأسئلة ) \*\*\*\*\*

*"Have a Good Luck"*

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Examination Committee: Prof. Dr. Amal Taha  
Prof. Dr. Gamal Kamel  
Prof. Dr. Ramadan Sayed



**Answer the Following Questions**

**I- Choose the correct word from (brackets). (12 marks)**

- 1- When a patient is better but then gets worse again, the patient has (recurred/relapsed/recruited).
- 2- Improvement, especially in recurring conditions such as cancer, is (recession/remission/revision).
- 3- Before he died, the patient (has suffered/has been suffering/had been suffering) for a month.
- 4- The patient's condition (get worse/improved/deteriorated) and she died.
- 5- The plural of glomerulus is (glomeruluses / glomerulae / glomeruli).
- 6- (Though/Although/Despite) the dangers of blood doping, many athletes use the technique.
- 7- The new patient has been feeling really (run-about/run-around/run-down) lately.
- 8- He has no stamina and the smallest things seem to wear him (up/away/out) completely.
- 9- He is (drunk/teetotaler/teetotal), but he sometimes has a glass of beer.
- 10- (counterpart/free/over-the-counter) medications are taken without a prescription from a doctor.
- 11- The lifespan of a (platelet-RBC-WBC) is about 9 or 10 days
- 12- He (recommended /advised/examined) that you make some dietary changes.

**II: Read the following passage and answer the questions below. (12 marks)**

We use the word 'alternative' to describe types of treatment that are not part of conventional western medicine. Herbalism, homeopathy, yoga and faith healing are all alternative treatments. Some alternative treatments come from countries like China and India. Others are simply very old methods of treatment and have been replaced by syringes, scans and tablets.

Many scientists say that alternative treatments are not scientifically tested, and that alternative practitioners are often unqualified people who put patients in danger by interfering with conventional treatment. Alternative practitioners say that science does not know all the answers. They say that alternative medicine takes a holistic approach, which means it treats the whole person: body, mind and spirit. They say that conventional medicine does not do this.

Some people use alternative treatments when conventional medicine offers no hope of recovery. Some terminally ill patients don't care what treatment they use if it seems to work, and it doesn't harm them. In addition, they get a lot of attention from the practitioner.

Many scientists believe that when alternative treatments like homeopathy seem to work, this is because of a 'placebo effect'. This is when something completely inactive like water, is given to a patient. If the patient believes it is a medicine and expects it to work, their condition may actually improve. The placebo effect shows that mental attitude and the patient's belief in a treatment are a major part of any cure.

1. What is the opposite of 'alternative medicine'?
2. What are syringes, scans and tablets examples of?
3. How are alternative healers dangerous? They
4. What do alternative practitioners say conventional medicine doesn't do?
5. When do people often turn to alternative medicine?
6. What two things are very important for a successful treatment?

**III: Do as shown between brackets. (12marks)**

- 1- The drug suppresses the body's natural instinct to reject the transplanted tissue. (passive)
- 2- We replaced the patient's hip. (use the noun of the verb replace)
- 3- There is no cure for this disease. (use the verb of cure)
- 4- The treatment of disease or other condition by surgery is called..... (complete)
- 5- The pain in his leg is very great. That's why he can hardly walk. (join using so ...that)
- 6- The patient has a complaint about an excess of bile in his blood. (Use the adjective of excess)

**IV: Write a paragraph of at least 10 sentences on One only of the following (14 marks).**

A: Your future specialization.

B: The problems doctors have in your place and how to solve them.

*Test Ended. Best Wishes.*

*Dr. Reda Saeed*





جامعة اسوان

المادة : حاسب الي  
الزمن : ساعتان  
التاريخ : ٢٠١٧/٠٦/١٤ م  
الفرقة : الأولى - كلية الطب  
الإمتحان : دور مايو ٢٠١٧ م



كلية العلوم قسم الرياضيات  
شعبة علوم الحاسب

### أجب عن الاسئلة الآتية

**السؤال الاول:** (كل فقرة ٣ درجات)

- أوجد المكافئ العشري للعدد  $(1001.01)_2$
- أوجد ما يكافئ العدد  $(D7)$  في النظام الثنائي.
- حول العدد  $(10101011)_2$  من النظام الثنائي الى النظام الثماني.
- أوجد ما يكافئ العدد  $(133)_{10}$  بالنظام الثماني.
- حول العدد  $(19.6875)_{10}$  من النظام العشري الى النظام الثنائي .
- أوجد ناتج الطرح التالي بالنظام الثنائي و ناتج الجمع بالنظام السادس عشر:

1 0 1 1 0 1

0 1 1 0 1 0

3 C F 8

6 E D 5

+

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**السؤال الثاني:** من بيئة برنامج Microsoft word أجب عن الآتي: (كل فقرة ٣ درجات)

- تكلم بإيجاز عن تصميم التبويبات ببرنامج Microsoft word 2007
- وضح أهمية شريط "أدوات الوصول السريع" وما طريقة إضافة أيقونات لهذا الشريط.
- ما المقصود بالتعداد النقطي و الرقمي
- تكلم بالتفصيل عن أمر "البحث والاستبدال"

**السؤال الثالث:** باستخدام لوحة المفاتيح فقط كيف يتم تنفيذ الآتي في الورد: (كل فقرة درجتان)

1. لنقل مؤشر الماوس إلى بداية السطر أو نهايته
2. للذهاب إلى صفحة معروف رقمها لدينا.
3. لفتح مستند جديد أثناء العمل مع الورد.
4. لطباعة المستند الحالي.
5. لقص فقرة تم تحديدها.
6. للترجع عن أمر سابق.
7. لتغيير تنسيق الخط.
8. للتحويل بين الكتابة باللغة الإنجليزية والعربية.
9. لعمل خط تحت كلمة تم تحديدها
10. للبحث عن كلمة ما داخل المستند.

تمنياتي بالتوفيق، د/ محمد عيد