



University of Technology
Department of Applied Sciences
Final exam 2016-2017



Subject: Principle of Biotechnology
Branch: Biotechnology
Examiner: Dr. Nehia Neama Hussein

Class: 1 class
Time: 3 hours
Date: 2016/2017

(ملاحظة الاجابة عن اربعة اسئلة فقط)

Q1:- Define the following:- (5 Only) (12.5 Mark)

- 1- Medical biotechnology
- 2- Bioprocessing
- 3- A stem cell .
- 4- Tissue engineering.
- 5- Tissue culture
- 6- Industrial microbiology .
- 7- Fermentation.
- 8- Environmental biotechnology.

Q2:- (12.5 Mark)

A- Which technology in medical biotechnology do you feel is/will be the most effective/helpful? Why?.

B - What is HPLC used for?.

Q3:- *only one Q* (12.5 Mark)

A- How is a sample actually put into an LC system in HPLC, and give the Columns Types in this techniques .

B- Tissue culture, both plant and animal has several critical requirements list it .

Q4:- (12.5 Mark)

A- What's the benefit of Plant Tissue Culture?

B- How can we see the DNA sample as we load it into the gel?

Q5:- Explain for two only :- (12.5 Mark)

A- The microbiologist in an industrial establishment does not function by himself.

B- The microbiologist or biotechnologist has a central and key role in his organization.

C- Steps that making (mAb).

D- Purpose of Gel Electrophoresis.



University of Technology
Department of Applied Sciences
Final Examination 2016/2017
graduate Studies



Subject: Molecular Biology

Branch: Biotechnology

Examiner: Prof.Dr.Abbas A.Mohammad

Class: First class

Time: 3 hours

Date: 29 \ 5\ 2017

Note : Answer only 5.

Q1: Draw and describe of Transposone ?

Q2: Give the properties of plasmids which used in genetic engineering?

Q3: A: What are difference between transcription and replication ?

B: Describe this figure

3' → 5' 5' ← 3' ?

Q4: Briefly define , explain or identify (only 7)?

Red biotechnology , nanobiology , nucleoside , oligonucleotide ,
complementary strand DNA , D-form of DNA , Genome size , Genotype ,
Hybridization , conservative synthesis .

Q5: What are the agents which caused DNA damage ?

Q6: Give one important function for each of the following ? (only 7)?

Karyotype , replicon , topoisomerases II, I , primases , dna B ,
dna E , Telomere , DNAPolymerase I .



University of Technology
Department of Applied Science
Final Examination 2016-2017



Subject: General Chemistry
Division: Biotechnology
Examiner: Dr. Dhafer Saber

Year: First
Time: 3 hours.
Date: 06/06/2017

Note: Answer four questions only (each question has 25 marks).

Q.1: Answer with equations (if found) each the following points:

- 1- $PbSO_4$ compound is more soluble in acidic solution than in water.
- 2- The end point in titration technique.
- 3- The mole method main steps.
- 4- An ionization constant expression of H_2SO_4 solution.
- 5- The acid strength decreases as follows: $HClO > HBrO > HIO$?

Q.2: A) Write (True) or (False) and correct the answer (if found) for the each of the following sentences:

- 1- The bond in HF molecule is called a non-polar covalent bond. *f halogen*
- 2- The solution system $NaClO_4/HClO_4$ act as a buffer solution.
- 3- The empirical formula tells us which elements are present and the simplest whole-number ratio of their atoms.
- 4- If K_b for the anion is smaller than K_a for the cation, the solution will be basic.
- 5- The effect of adding a common ion is to increase the salt solubility in solution. *✓*

B) Write the Lewis structure and the formal charges for the carbonate ion (CO_3^{2-})? *✓*

Q.3: A) For the chemical reaction: $4Hg(l) + O_2(g) \longrightarrow 2Hg_2O(s)$

- 1- Calculate the number of moles of solid mercury oxide that can be produced by the reaction of oxygen gas with 25 mL of liquid mercury (density = 13.6 g/ml)? *صياغة ورد الجواب*
- 2- Calculate the number of molecules of oxygen required? *صياغة ورد الجواب*

B) Predict (with reasons) whether the following solutions will be acidic, basic or nearly neutral: $[NH_4I, CaCl_2, KCN, Fe(NO_3)_3]$?

Q.4: A) Define each of the following:

- 1- Ion product. 2- Octet rule. 3- Percent yield. 4- Mixtures. 5- Intermolecular forces.

B) Calculate the percentage of CH_3COONa/CH_3COOH which give a solution of $pH=5$, $K_a = 1.8 \times 10^{-5}$?

Q.5: A) Calculate the solubility of copper hydroxide $Cu(OH)_2$ in g/L? $K_{sp} = 2.2 \times 10^{-20}$

B) Calculate the concentration of aqueous ammonia necessary to initiate the precipitation of iron (II) hydroxide from a 0.0045 M solution of $FeCl_2$?

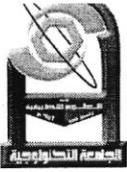
$$K_{sp} \text{ of } Fe(OH)_2 = 1.6 \times 10^{-14}$$

$$K_b \text{ of } NH_3 = 1.8 \times 10^{-5}$$

Atomic weight: C: 12, H: 1, O: 16, Na: 23, S: 32, Cl: 35.5, N: 14, Hg: 200.6, Cu: 63.5
Atomic number: C: 6, H: 1, O: 8

"Good Luck"

14.4 =
14.



University of Technology
Department of Applied Science
Final Examination 2017-2016
First Attempt



Subject: English Language
Branch: Math. Computer Applications; Applied Chemistry;
Bio- Technology
Examiner: Muna Abdual Hussein

Class: 1st. year

Time: 3 hours

Date:

Q1: Read the following passage, then answer the questions below: (25marks)

Have you ever wanted to live in a modern city, one of the biggest places to live in a world? Set in the heart of northern France, Paris is my favorite city. In this lovely place everyone can find something what they like. Paris has many impressive sight to see, ranging from the historical beauty of Notre Dame Cathedral and The Louvre to Art de Triomphe and the Champs-Elyses. Paris has been a major center of innovation and genius for centuries, and this heritage is reflected in this city's incomparable museums and galleries. The word "museum" may ever be unfit when it comes to the Louvre: the collections are so vast, diverse and breathtaking that visitors may have the impression of navigating a move of distinct artistic and cultural worlds.

1. Which city is set in the heart of northern France?
2. Is the word "museum" fit to the Louvre?
3. Which of the following words can replace the "impressive" in the third line:
a- nice b- remarkable c- fit
4. What makes Paris a major center of innovation and genius for centuries/
5. In no more than five sentences, describe your favorite city?

Q2: Fill the blanks in the sentence, using the adjectives in the following box(choose 5). (10 marks)

younger more beautiful taller beautiful larger higher bigger
shortest biggest the highest the best more difficult

- 1- My brother isthan me, but he is younger, too.
- 2- A rose is than a daisy.
- 3- The Earth is in diameter than the moon.
- 4- Jupiter is the planet in our Solar System.
- 5- I am theperson in my family.
- 6- Mount Everest ismountain in the world.
- 7- That wasmovie ever.
- 8- Learning Japanese isthan leaning English.

Q3: The dialogue below is in a restaurant between the waiter (A) and a costumer (B). Complete the dialogue with a suitable word or phrase in the box above the dialogue. (15 marks)

Here is so sorry take care Thank you I will just over there by mistake
But That's OK ordered I will only There

- A:your breakfast!
B: Thanks so with an answer much. Miss, I believe Imy eggs scrambled, and these are fried.
A: Sorry, your friendordered fried eggs, and I gave you his.....
B: Oh yeah. Here,trade with him.

A: Here are your pancakes, sir.

B: I ordered waffles!

A: I am

B: I will eat my eggs and bacon, and you can take my pancakes back.

A: Good, sir. I willof that right away.

B: so much!

Q4: Choose either A or B

(10 marks)

A: Match the question mark in column A with the answer in column B

A	B
1. Where	a- Ahmed
2. When	b- in Baghdad
3. What	c- on Sunday
4. Why	d- because
5. How many	e- ten

B: Find the question word in the following box that complete the questions below:

Where	How	Why	Who	How much	What	How many
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- 1- do you live?
- 2- old are you?
- 3- do you work hard?
- 4- is your favorite sport's team?
- 5-languages does your teacher speak?

Q5: Rewrite the following sentences correctly (choose5):

(10 marks)

- 1- My uncle is Saturday works a pianist. often with his friends everyHe.
- 2- Paris is my favorite city. capital It is the of France.
- 3- Why you do work so hard?
- 4- Excuse meyou! Can help me?
- 5- It's. I will join you laterOK.
- 6- We can't go far for a walk. It's too.
- 7- I can't find my suitcases anywhere.

Best Wishes



University of Technology
Department of Applied Sciences
Final Examination 2017-2016
First Attempt



Subject : حقوق الانسان
Branch : الرياضيات والتقانات والفيزياء
Examiner : شيرزاد احمد

Class : 1st year
Time : 3 hours
Date :

- س1: تكلم ما تعرفه عن العهدان الدوليان الخاصان بحقوق الانسان.
- س2: تكلم ما تعرفه عن الاتفاقية الاوربية لحقوق الانسان.
- س3: اشرح بالتفصيل ما تعرفه عن الاعلان العالمي لحقوق الانسان مع ذكر بنوده.
- س4: تكلم ما تعرفه عن مجلس حقوق الانسان.
- س5: اشرح بالتفصيل ما تعرفه عن حقوق الانسان في حضارة وادي الرافدين.

ملاحظة: اجب عن اربعة اسئلة فقط.



Subject: Computer
Examiner: Dr. Mojahid M. Najim

الاجابه عن اربع اسئله فقط

السؤال الاول

(١٢,٥ درجه)

- ا- اذكر الفرق بين (Save و Save as) و (Cut و Copy) و (Print و Print Preview) ؟
ب- عدد ثلاث طرق للحفاظ في برنامج (Word) ؟
ج- اذكر خطوات تنفيذ الاوامر التاليه : ١- عرض الاشطره والمساطر على الشاشة ٢- مزج خليتين في الجدول ضمن اطار (Word) ٣- تكوين ملف جديد ضمن اطار (Excel)

السؤال الثاني

(١٢,٥ درجه)

- ا- تكلم باختصار عن : ١-وحده المعالجه المركزيه (Control Processing Unit) ٢- انظمه التشغيل للحاسبه (Operating System) ؟
ب- تكلم عن استخدامات برنامج Word و Excel ؟
ج- اذكر الخطوات في تنفيذ الاوامر التاليه : ١- خلق ملف جديد ٢- ترتيب الايقونات على سطح المكتب ٣- ترقيم الصفحات

السؤال الثالث

(١٢,٥ درجه)

- ا- ما هي الخطوات الازمه في تشغيل العرض التقديمي تلقائيا في برنامج Power Point ؟
ب- ما هي الخطوات المتبعه في حذف او اضافه سطر او اكثر في برنامج (Excel) ؟
ج- ماهي الخطوات الازمه في انشاء جدول عدد اعمده ٥ وعدد الاسطر ٧ ضمن Word ؟

السؤال الرابع

(١٢,٥ درجه)

- ا- عدد طرق عرض الشرائح (Slide views) في برنامج (Power Point) ؟
ب- اذكر الابعازات المطلوبه مع الرسم للقيم $x = 10$ و 20 و 30 و 40 و 50 مع قيم $y = 70$ و 50 و 30 و 80 و 90 في برنامج Excel ؟

السؤال الخامس

(١٢,٥ درجه)

- ا- ما هي الفروقات الرئيسه مابين البرامج (Word و Excel و Power Point) ؟
ب- ما هي الخطوات المتبعه باستعمال حركه مضبوطه مسبقا (Preset animation) في برنامج Power Point ؟





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graduate Studies



Subject: Molecular Biology
Branch: Biotechnology
Examiner: Prof.Dr.Abbas A.Mohammad

Class: First class
Time: 3 hours
Date: 29 \ 5\2017

Note : Answer only 5.

Q1: Draw and describe of Transposone ?

Q2: Give the properties of plasmids which used in genetic engineering?

Q3: A: What are difference between transcription and replication ?

B: Describe this figure

$$\begin{array}{ccc} 3' & \longrightarrow & 5' \\ 5' & \longleftarrow & 3' \end{array} \quad ?$$

Q4: Briefly define , explain or identify (only 7)?

Red biotechnology , nanobiology , nucleoside , oligonucleotide , complementary strand DNA , D-form of DNA , Genome size , Genotype , Hybridization , conservative synthesis .

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graduate Studies



Subject: Cell Biology
Branch: Biotechnology
Examiner: Prof.Dr.Abbas A.Mohammad

Class: First class
Time: 3 hours
Date: 29 \ 5\2017

ملاحظة : أجب عن خمسة أسئلة فقط ؟

س1: أجب عن فرعين مماياتي ؟

أ-أذكر أهم تطبيقات الهندسة الوراثية في المجال الزراعي ؟

ت- يعتقد أن الغلاف النووي عبارة عن تحويل للنظام الغشائي البلازمي ، وضح ذلك؟
ث- بين الفرق الوظيفي بين رايبوسومات الملتنصة على الشبكة الأندوبلازمية والحررة ؟

س2: أعتبر كل من Mitochondria و Plastids عضيات Semiautonomous ، وضح ذلك ؟

ب-بين أهم الظواهر البايولوجية في طور الضام Pachytene من الأقسام الأختزالي ؟

س3: أبين مخططا لمكونات مغزل الأقسام Mitotic spindle في الطور الأستوائي ؟

ب-ماهي أهم أنزيمات Microbodies التي توجد في خلايا الكبد والكلية ؟

س4: أ-عرف خمسا مماياتي ؟

Allosteric enzymes , unit membrane ,etioplast , Spherosomes , Exocytosis ,
Cell theory , Oligonucleotides .

ب-أذكر خمسا من وظائف الشبكة الأندوبلازمية ؟

س5: أجب عن فرعين مماياتي ؟

أ-ماهي أهم المتطلبات الأساسية لعملية بناء البروتين ؟

ب-أذكر منشأ الجسم المركزي Centriole ؟

ج-ماهي أهم الظواهر البايولوجية التي ظهرت في الحقبة التقليدية (الكلاسيكية)؟

س6: أجب عن فرعين مماياتي ؟

أبين مخططا لأنموذج لوحدة الغشاء البلازمي المقترح من قبل روبرسن Robertson 1960 ؟

ب-حدد موقع Nuclear lamina ، ثم بين تركيبها بشكل دقيق ؟

ج-اعط وصفالا Mycoplasmas ؟



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Note : Answer only 5.

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