### Practice Test

**QSSC**  
Biology  
Advanced  
Second semester  

**الشماحة الثانوية العامة لدولة قطر**  
الأحياء  
المتقدم المستوى المتقدم  
الفصل الدراسي الثاني  

**الاختبار التجريبي**  

2016

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<th>Directions</th>
<th>التوجيهات</th>
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| ▪ This test has **17** items. Some of the items are multiple choice items (13). You will select the correct answer. Some items require you to write a short response (4).  
▪ You may use these practice items as a [model](#) to prepare for the Secondary School Certificate Test in Biology.  
▪ The items have been presented in Arabic and English to help you better understand them.  
▪ You may answer the short response questions in Arabic or in English. | ▪ عدد أسئلة هذا الاختبار 17. بعض الأسئلة هي أسئلة اختيار من إجابات متعددة (13)، تقوم فيها باختيار الإجابة الصحيحة. وتتطلب بعض الأسئلة كتابة إجابة قصيرة (4).  
▪ يمكنك استخدام الأسئلة التجريبية التالية كنموذج للاستعداد لاختبار شهادة الثانوية العامة المدرسية في مادة الأحياء.  
▪ تم توفير هذه الأسئلة باللغة العربية والإنجليزية لمساعدتك على فهمها بصورة أفضل.  
▪ يمكنك الإجابة على الأسئلة التي تتطلب إجابات قصيرة باللغة العربية أو الإنجليزية. |
The role of the killer T lymphocytes in the body

1. Produce MHC molecules and show them on its surface
2. Attack cancer cells and the virus-infected cells.
3. Produce antibodies to protect the body
4. Convert to B memory cells as a response to the antibody generators.

Which of the following symbols indicates to the disulfide bridges?

A. A
B. B
C. C
D. D

1. Which of the following symbols indicates to the disulfide bridges?
(A) A
(B) B
(C) C
(D) D

2. Which of the following symbols indicates to the disulfide bridges?
(A) A
(B) B
(C) C
(D) D
Which enzyme is used to produce the part labeled (A) in the following figure?

Ligase
Transcriptase
Restriction
Polymerase

What does active immunity involve?
Get ready antibodies against snakes bites
Transmission of antibodies from the mother through the placenta
Direct exposure to the pathogen either attenuated or alive
Get ready made antibodies through breastfeeding
Which of the following best describes the adaptation of the part labeled (B) to the performance of its osmotic regulation?

- Impermeable to salts, ions, and water
- High permeability to water and impermeable to salts and ions
- Impermeable to water and high permeability to salts
- High permeability to bicarbonate and hydrogen ions and ammonia

Hormone secreted by the pancreas to higher blood glucose level.

- Insulin
- Melatonin
- Glucagon
- Adrenalin
What is the name of the part labeled (A)?

- cerebrum
- hypothalamus
- medulla oblongata
- corpus callosum

Which of the brain structures contain special centers to control thirst and water balance?

- A: cerebrum
- B: hypothalamus
- C: medulla oblongata
- D: corpus callosum

A: A
B: B
C: C
D: D
Which gland produces melatonin?

- parathyroid
- hypothalamus
- pineal
- pituitary

What is the role of the structure in foot labeled (X) in the following reflex arc?

- receptor
- stimulus
- coordinator
- effector
One of the following sentences describes the function of the following specialized cell:

Its cell membrane permeable for water molecules
increase the surface area for filtration
Reabsorption for glucose
Reabsorption for ions

Which way is used to mobilize the enzyme on the surface of the Sodium Alginate granules when producing lactose-free milk for people with lactose-allergy?
What is the effect of entering the whiteflies on the numbers of wasps in agricultural crops which are produced in greenhouses as shown in the following figure?

- helped to counter the rise in the number of flies
- helped to increase the numbers of flies
- reduce the number of wasps in greenhouses
- reduced the amount of crops

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أ. قارن بين هرمون الأنسولين والجلوكاجون في الجدول التالي.

<table>
<thead>
<tr>
<th>الجلوكاجون (Glucagon)</th>
<th>الأنسولين (Insulin)</th>
<th>المقارنة</th>
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<tbody>
<tr>
<td>الخلايا المسؤولة عن إفرازه في جزر لانجرهانس</td>
<td>Cells responsible of its secretion from Langerhans Islets</td>
<td></td>
</tr>
<tr>
<td>موقع الجلاكوجين في الآلية التي يعمل من خلاله الهرمون لأداء وظيفته</td>
<td>Glycogen location in their mechanism of the hormone performs its function</td>
<td></td>
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ب. اكتب الاضرار الناتجة عن ارتفاع السكر في الدم عند مريض السكري في الكلية والعين مع مرور الوقت.

Write the damage caused by high blood sugar in diabetics in kidney and the eye with the passage of time.

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<th>الكلية</th>
<th>العين</th>
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The diagram below shows nerve synapse area. Use the diagram and answer the following questions.

A. Name the structures labeled (1).

B. Write the function of the structures labeled (2).

C. Show the fate of the acetylcholine in the synaptic region after the arrival of synapse to postsynaptic membrane.
A. the Figure below shows the immune response during the exposure to antigen. Use the figure and answer the question.

A. Why is the immune response in case (B) larger and faster than (A)?

B. Name two diseases that cause the production of long-term memory cells.
The following figure represents humoral immune response. Use the figure and answer the following questions.

A. Name the cells labeled (a) and (b).

A

B

B. Explain the importance of the helper T cells.

C. Show the importance of the helper T cells.
The following figure shows the ultrastructure of the Bowman’s Capsule.
Use the figure and answer the following:

A. What is the effect of the difference in thickness of arteriole (A) and (B)?

B. Write the importance that the walls of the structures Labeled (C) contain fenestrations.

C. Mention one function for nephron.