



UNIVERSITÀ DEGLI STUDI
DI TRENTO

**Prova di ammissione al corso di laurea in
SCIENZE E TECNICHE DI
PSICOLOGIA COGNITIVA
Anno accademico 2014/2015**

BIOLOGIA [1-15]

01. L'osmosi è:

- A) Lo spostamento di acqua attraverso una membrana semipermeabile secondo gradiente di concentrazione
- B) Lo spostamento di ossigeno molecolare attraverso una membrana semipermeabile secondo gradiente di concentrazione
- C) Lo spostamento di ioni attraverso una membrana semipermeabile secondo gradiente di concentrazione
- D) Lo spostamento di sali attraverso una membrana semipermeabile secondo gradiente di concentrazione

Risposta corretta: A

02. Il secreto di ghiandole esocrine si riversa:

- A) Nei dotti escretori annessi
- B) Nella circolazione sanguigna tramite i capillari
- C) Negli spazi interstiziali degli adenomeri
- D) Nei capillari se il secreto è ormonale, nei dotti escretori se il secreto è enzimatico

Risposta corretta: A

03. Cosa sono gli alleli?

- A) Differenti versioni di uno stesso gene
- B) Una classe di cofattori inorganici
- C) Gli unici geni necessari per determinare un fenotipo
- D) Coppie di cromosomi omologhi

Risposta corretta: A

04. Quale di questi fattori **NON** è alla base dell'evoluzione delle specie viventi?

- A) La riproduzione asessuata
- B) Le mutazioni casuali
- C) La generazione di prole fertile
- D) Gli eventi di crossing-over

Risposta corretta: A

05. La guaina mielinica permette:

- A) Una più rapida trasmissione dell'impulso elettrico nel neurone
- B) Il contenimento dei fasci di neuroni all'interno dei nervi
- C) L'assorbimento di sostanze nutritive da parte di cellule della mucosa intestinale
- D) Una resistenza maggiore delle cellule a stress meccanici

Risposta corretta: A

06. L'RNA messaggero ha solitamente una struttura:

- A) A singolo filamento
- B) A doppia elica destrorsa
- C) A doppia elica sinistrorsa
- D) A doppio filamento lineare

Risposta corretta: A

07. La respirazione aerobica è caratteristica degli organismi che necessitano di:

- A) Ossigeno
- B) Azoto
- C) Anidride carbonica
- D) Acqua

Risposta corretta: A

08. Il nome scientifico di un organismo è composto da due termini. Quali informazioni riguardanti la sua classificazione forniscono?

- A) Il genere e la specie
- B) L'ordine e la famiglia
- C) La famiglia e la specie
- D) La famiglia e il genere

Risposta corretta: A

09. Gli anticorpi sono:

- A) Proteine del siero del sangue

- B) Proteine di membrana degli eritrociti
- C) Cellule del sistema immunitario
- D) Molecole estranee che causano l'attivazione delle risposte immunitarie

Risposta corretta: A

10. L'insulina è:
- A) Un ormone proteico che regola il livello di glucosio nel sangue
 - B) Un ormone steroideo che regola la fluidità delle membrane cellulari
 - C) Un farmaco di origine sintetica
 - D) Un ormone proteico che regola l'attività degli enzimi pancreatici

Risposta corretta: A

11. Il potenziale d'azione è:
- A) La variazione del potenziale di membrana dei neuroni che genera l'impulso nervoso
 - B) La differenza di concentrazione di soluti che genera il movimento di acqua
 - C) Il momento di contrazione dei ventricoli che immette il sangue nella piccola e grande circolazione
 - D) La traspirazione di acqua dalle foglie di una pianta che induce il richiamo di acqua dalle radici e quindi l'assorbimento di questa dal terreno

Risposta corretta: A

12. L'amido è un polimero del:
- A) Glucosio
 - B) Fruttosio
 - C) Ribosio
 - D) Galattosio

Risposta corretta: A

13. La riproduzione asessuata **NON** permette:
- A) Nuove combinazioni del materiale genetico parentale
 - B) La fertilità della discendenza
 - C) Uno sviluppo corretto di buona parte della discendenza
 - D) La generazione di una discendenza con un numero di cromosomi omologhi sempre uguale a quello parentale

Risposta corretta: A

14. A quale ordine appartiene la specie *homo sapiens* ?
- A) Primati
 - B) Ungulati
 - C) Mammiferi
 - D) Onnivori

Risposta corretta: A

15. Se un individuo di gruppo sanguigno O si accoppia con un individuo di gruppo sanguigno AB, la probabilità di avere un/a figlio/a di gruppo AB sarà:
- A) Nulla
 - B) 25%
 - C) 50%
 - D) 100%

Risposta corretta: A

INGLESE [16-30]

COMPRESIONE DEL TESTO1

Leggete con attenzione il seguente brano quindi rispondete ai prossimi 15 quesiti. Fra questi, alcuni si riferiscono alle parole mancanti - indicate nel testo con i numeri da I a VII - altri riguardano il suo contenuto.

When I was in primary school, I really enjoyed lying. Not the white lies you tell your mother when you ate biscuits that you were not supposed **I**. I am talking about the elaborate lies you tell friends to make yourself appear to be better than you are. I remember **II** my friends in primary three that my father was the President of Coca Cola. I remember my friends in primary five thought that I had gone deaf in one ear. I really relished the whole situation. As I grew older, my lying continued. I enjoyed people's reactions to my seemingly amazing life. When I was 15 that all changed. I met someone I really looked up to (he was 17). He became a mentor for me as I began my search into the astral world. He is the one who put me on the path of honesty and integrity. And he did it by hurting me **III** that I changed instantly. In my usual fashion, I told him lies just as I had been telling other people. I made up far-fetched stories to get him to be

more interested in me because I was not sure the truth would be enough to make him want to continue working with me. But he knew me so well, probably **IV** I knew myself. One day he said to me: "I can't talk to you on the phone any more because I can't see your eyes and so I'm not sure when you're lying to me." That really shocked me. One, because I did not know he knew I had been lying to him sometimes, and two, because he was willing to end our friendship over those lies. I vowed at that moment no more lying to him! It was a hard transition for me to make because I was used to exaggerating stories and experiences to get attention. But for him, and for his wise counsel, I made a pact with myself never to tell even one single white lie to him again. In time, his trust in me was rebuilt and we enjoyed a great friendship and relationship. That's how I learned the value of honesty. I decided that I **V** the truth, that the truth was powerful and strong and that lies merely created a false foundation that could crumble at the slightest poking. I realized that I felt more powerful when I told the truth. I felt as if I was helping to build reality instead of creating a false Matrix-like reality. As Merlin said to Arthur in the film *Excalibur*, "When a man lies, he murders some part of the world." It is true. Every lie you tell alters the universe and makes it unreal. In my 20s, I had a friend who was a pathological liar. Her life was based on lies and the elaborateness of her lies would put my early days to shame. We discussed **VI** honesty a lot, and I told her that I could not accept that she was telling me the truth since she told me so often of the lies she was telling other people. In a way, I did to her what my mentor had done to me. I told her that I could not be her friend unless I knew I could trust her. She asked me how to be honest all the time. My answer was simple: **VII** do things you will have to lie about later. If you have to lie, you should not be doing them.

After all, if you feel good about what you are doing, why would you lie about it? Do we not lie when we are ashamed of who we are or what we have done? Make your life something you do not need to lie about. Value truth and honesty. Decide from this day forward that you will be completely honest and truthful in all your dealings (with others and yourself). Imagine what our world would be like if no one lied. Help create that world by honouring the truth.
Fropki.com Feb 2014 - *How I became honest*

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16. What is the main point in the text?
- A) Eventually the narrator actively practised what was learnt from previous experiences
 - B) Lying pays
 - C) The narrator's mentor sets out to teach everyone
 - D) The future friend was a liar just like the main character

Risposta corretta: A

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17. In the passage what does "far-fetched" mean?
- A) Unlikely
 - B) Improbably
 - C) Understated
 - D) Captivating

Risposta corretta: A

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18. The text demonstrates that the central character's teenage friend
- A) Depended on the sense of sight in analysis
 - B) Forced the same character to make a pact
 - C) Did not like the same character's telephone manner
 - D) Was worried about his friend's hearing

Risposta corretta: A

-
19. Later in life the narrator
- A) Understood her dishonesty from what she told others
 - B) Uses astral knowledge to put the friend on the right path
 - C) Quotes the film "Excalibur" to convert her
 - D) Lost all trust in this liar

Risposta corretta: A

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20. According to the passage
- A) Basically on two counts it was cruel to be kind
 - B) Two individuals on two occasions set out to save a friendship
 - C) History does not repeat itself
 - D) If you want to make friends it is always necessary to tell the truth

Risposta corretta: A

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21. The passage demonstrates that
- A) The case of adult lying puts the previous case in perspective
 - B) Once a liar, always a liar
 - C) The adult woman was better at lying than the narrator
 - D) Lying depends on the example given by others

Risposta corretta: A

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22. In the passage "to relish" means
- A) To take pleasure in
 - B) To invent
 - C) To believe in
 - D) To look forward to

Risposta corretta: A

-
23. Which is accurate in reference to the text?
- A) The central character ends up quite didactic
 - B) The astral mentor wanted to improve everybody
 - C) Trust is the essential ingredient of friendship
 - D) Primary school should be the origin of all truth

Risposta corretta: A

-
24. When you ate biscuits that you were not supposed [I]. Which is the correct word or words for the space from (A) to (D)?
- A) to
 - B) of
 - C) without
 - D) with

Risposta corretta: A

-
25. I remember [II] my friends. Which is the correct word or words for the space from (A) to (D)?
- A) convincing
 - B) persuades
 - C) to have persuaded
 - D) to convince

Risposta corretta: A

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26. And he did it by hurting me [III] that I changed instantly. Which is the correct word or words for the space from (A) to (D)?
- A) so badly
 - B) too much
 - C) very much
 - D) such lot

Risposta corretta: A

-
27. But he knew me so well, probably [IV] I knew myself. Which is the correct word or words for the space from (A) to (D)?
- A) better than
 - B) as well that
 - C) not worse as
 - D) without as

Risposta corretta: A

-
28. I decided that I [V] the truth. Which is the correct word or words for the space from (A) to (D)?
- A) would honour
 - B) would have honour
 - C) will have honoured
 - D) would have honoured

Risposta corretta: A

-
29. We discussed [VI] honesty a lot. Which is the correct solution for the space from (A) to (D)?
- A) []
 - B) about
 - C) around
 - D) of

Risposta corretta: A

-
30. [VII] do things you will have to lie about later. Which is the correct word or words for the space from (A) to (D)?

- A) Never
- B) Always
- C) Why
- D) Ever

Risposta corretta: A

Rispondete alla successiva domanda 31 SOLO se espressamente indicato dalla Commissione.

DOMANDA DI RISERVA [31]

31. Quale delle seguenti affermazioni sugli ormoni **NON** è corretta?
- A) Abbassano la soglia di energia di attivazione delle reazioni metaboliche
 - B) Sono secreti nella circolazione sanguigna
 - C) Possono agire anche in prossimità delle cellule da cui vengono secreti
 - D) Possono regolare l'attività di altri ormoni

Risposta corretta: A



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25 Agosto 2016

ANNO ACCADEMICO 2016/2017

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1. Quale tra i seguenti è un ormone steroideo?
- A) Nessuna delle alternative proposte
 - B) Glucagone
 - C) Progesterone
 - D) Insulina
-
2. Quali elementi del sangue sono i principali responsabili del fenomeno di emostasi?
- A) Linfociti
 - B) Eritrociti
 - C) Granulociti
 - D) Piastrine
-
3. Prendiamo in considerazione una giraffa e un ragno. Quale o quali delle seguenti affermazioni sono vere?
1. Le cellule della giraffa sono molto più complesse di quelle del ragno
 2. La giraffa possiede un maggior numero di cellule
 3. Le cellule della giraffa sono più grandi di quelle del ragno
 4. Le molecole della giraffa sono più grandi di quelle del ragno
- A) Solo la 4
 - B) Solo la 2
 - C) La 2 e la 4
 - D) La 1, la 2 e la 3
-
4. Che cosa si intende per batteriofagi?
- A) Batteri in grado di uccidere certi tipi di linfociti
 - B) Batteri in grado di distruggere le membrane delle cellule eucariotiche
 - C) Virus che attaccano batteri
 - D) Linfociti in grado di fagocitare certi tipi di batteri
-
5. Quali delle seguenti patologie NON è causata da un virus?
- A) Tubercolosi
 - B) Rosolia
 - C) Varicella
 - D) Morbillo
-
6. Prendiamo in considerazione il seguente tratto di DNA: ACTTCGTAGGT. Quale sequenza rappresenta correttamente la sua duplicazione?
- A) TGAAGCATCCA
 - B) ACTTCGTAGGT
 - C) UGAAGCAUCCA
 - D) TGAACGATGGA
-
7. Il passaggio di sostanze attraverso le membrane semipermeabili:
- A) è libero per alcune molecole ma non per altre
 - B) avviene sempre contro gradiente di concentrazione
 - C) avviene necessariamente con consumo di energia
 - D) avviene sempre per gradiente di concentrazione
-
8. Quali tra le seguenti associazioni è ERRATA?
- A) Corpo calloso - comunicazione tra gli emisferi cerebrali
 - B) Talamo - produzione di ADH e ossitocina
 - C) Midollo allungato - controllo della respirazione
 - D) Cervelletto - coordinamento motorio

9. Il sangue ricco di ossigeno proveniente dalla circolazione polmonare (o piccola circolazione) confluisce:
- A) nel ventricolo sinistro
 - B) nell'atrio sinistro
 - C) nell'atrio destro
 - D) nel ventricolo destro
-
10. Immaginiamo di incrociare un individuo eterozigote per una caratteristica dominante con un individuo omozigote recessivo. Con quale probabilità si otterranno individui con fenotipo recessivo?
- A) 100%
 - B) 50%
 - C) 25%
 - D) 0%
-
11. Le proteine sono polimeri di:
- A) disaccaridi
 - B) acidi grassi
 - C) amminoacidi
 - D) cellulosa
-
12. Nell'uomo, in quali funzioni è principalmente coinvolto il sistema limbico?
- A) Linguaggio, scrittura, sonno/veglia
 - B) Memoria, udito, visione
 - C) Nell'uomo non esiste il sistema limbico
 - D) Emozioni, memoria, apprendimento
-
13. Dove si trova il metacarpo?
- A) Cranio
 - B) Mano
 - C) Spalla
 - D) Piede
-
14. Qual è il concetto fondamentale alla base del meccanismo di selezione naturale proposto da Darwin?
- A) Gli individui meglio adattati all'ambiente hanno maggiore probabilità di riprodursi
 - B) Gli individui più aggressivi hanno maggiore probabilità di sopravvivenza
 - C) La selezione naturale è totalmente casuale
 - D) Gli individui di dimensioni più piccole sono favoriti rispetto a tutti gli altri
-
15. L'endometrite è un'infezione che riguarda:
- A) I vasi sanguigni della pianta del piede
 - B) Il pancreas
 - C) La mucosa uterina
 - D) La cavità orale

COMPRESIONE DEL TESTO

Leggete con attenzione il seguente brano quindi rispondete ai prossimi 15 quesiti. Fra questi, alcuni si riferiscono alle parole mancanti - indicate nel testo con i numeri da I a VII - altri riguardano il suo contenuto.

A long and healthy life?

A baby born today could live to be not only 100, but even 120 years old. Hard to believe? Apparently, there could be a gene for not only long life, but long and healthy life.

Even today, there are many, many people who have passed the landmark age of 100 – an age that seemed an impossible achievement only a few decades [I]. In fact, there are now so many healthy, elderly people that a new term has been coined: the *wellderly*. These are people over the age of 80 who have no chronic diseases such as high blood pressure, coronary disease or diabetes and who have never taken medication for these conditions.

There have been [II] scientific studies of communities where a healthy old age is typical. These include places like Calabria, in southern Italy, and the island of Okinawa in Japan.

The small village of Molochio in Calabria numbers about 2,000 inhabitants. And of these, there are at least eight centenarians. When researchers ask people like this what the secret of their long life is, the answer has invariably to do with diet and is [III] always the same: 'I eat a lot of fruit and vegetables.' 'A little bit, but of everything.' 'No smoking, no drinking.'

But such evidence is now regarded as unreliable and these days scientists are looking beyond diet and lifestyle to genetic factors. Eric Topol, a researcher who questions the received wisdom, says, 'There must be genes that explain why some individuals are protected from the **harmful** genes that affect the aging process.'

New research into long life, looking at groups of people who have a genetic connection, has **[IV]** Ecuador. In one small region there are a number of people with a genetic condition called Laron syndrome. The main effect of this condition is to restrict the individual's growth to little more than a metre, but it also seems to protect them against both cancer and diabetes. Ultimately, those with Laron's syndrome live longer than the rest of their families. **[V]**, on the Hawaiian island of Oahu, there is a completely separate group of Japanese-American men who are particularly long-lived. And it turns out that they have a variant of the same gene as the Laron syndrome group.

Back in Calabria, scientists have been trying to work out exactly how much of the local longevity is **[VI]** genetics and how much is a consequence of **environment**. By checking public records going back to the 19th century, researchers have reconstructed the family trees of 202 nonagenarians and centenarians. They concluded that there were genetic factors which seemed to benefit the men more than the women – a surprising result because generally in Europe, women centenarians outnumber men by about five to one.

So what really makes people live longer? It seems **[VII]** an interaction of genes, the environment and ultimately a third factor beyond our control – luck.

Adapted from www.ngllife.com

16. The term "weilderly" refers to

- A) people with a gene for long life.
- B) people who have reached the age of 100.
- C) healthy people over the age of 80.
- D) elderly people who have never been sick.

17. Nowadays some scientists believe that

- A) genetics has nothing to do with the aging process.
- B) Laron syndrome is not a genetic disease.
- C) the secret to long life is to avoid drinking and smoking.
- D) there is a close relationship between genetics and longevity.

18. In the text, what does **environment** mean?

- A) Our eating habits.
- B) The physical and social world around us.
- C) Our family history.
- D) Our health.

19. In the text, what does the word **harmful** mean?

- A) healthy.
- B) adverse.
- C) beneficial.
- D) painful.

20. According to the text, individuals affected with Laron syndrome

- A) are concentrated in a small region in South America.
- B) have been found in Molochio.
- C) usually develop cancer and diabetes.
- D) are very short.

21. ... the answer has invariably to do with diet and is **[III]** always the same.

Choose the correct word or words to complete the sentence:

- A) about
- B) almost
- C) seldom
- D) too

22. Which of the following statements is true about the island of Oahu?

- A) A group of women from the island has the Laron gene.
- B) There are 202 nonagenarians.
- C) Most of its male inhabitants have diabetes.
- D) Some of its male inhabitants are very old.

23. Which of the following statements about Molochio is true?

- A) Nobody in Molochio has reached the age of 100.
- B) It is a small town.
- C) Most of its inhabitants are "welllderly" people.
- D) Eight of its inhabitants are under 95 years of age.

24. ... how much of the local longevity is [VI] genetics...

Choose the correct word or words to complete the sentence:

- A) in order to
- B) due to
- C) owing from
- D) because

25. It seems [VII] an interaction of genes...

Choose the correct word or words to complete the sentence:

- A) likely that is
- B) likely that it is
- C) probably is
- D) like to be

26. Researchers have discovered that

- A) in the 19th century people lived longer than today.
- B) in Europe men live longer than women.
- C) in Molochio men seem to live longer than women.
- D) many "welllderly" people are affected with Laron syndrome.

27. New research into long life ... has [IV] Ecuador.

Choose the correct word or words to complete the sentence:

- A) taken scientists to
- B) sent scientists in
- C) brought scientists in
- D) taken scientists at

28. [V], on the Hawaiian island of Oahu...

Choose the correct word or words to complete the sentence:

- A) In the same time
- B) While
- C) On the other part
- D) Meanwhile

29. ... an impossible achievement only a few decades [I].

Choose the correct word or words to complete the sentence:

- A) passed
- B) ago
- C) since
- D) past

30. *There have been [II] scientific studies...*
Choose the correct word or words to complete the sentence:

- A) many a few
- B) some few
- C) quite a few
- D) quite a little

Rispondete alla successiva domanda 31, SOLO se espressamente indicato dalla Commissione.

31. La bile viene secreta:

- A) dal fegato
- B) dalla cistifellea
- C) dal pancreas
- D) dallo stomaco