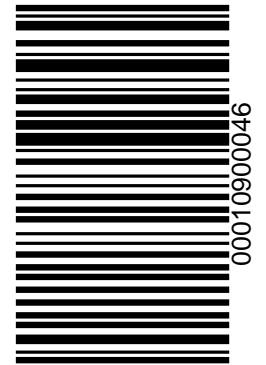


Facolta' di Scienze MM.FF.NN.
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Visto Commissione



11002

ISTRUZIONI PER LA COMPILAZIONE DEL FOGLIO RISPOSTE

Prima di iniziare la prova il candidato legga attentamente le indicazioni riportate di seguito

Per rispondere alle domande è necessario utilizzare esclusivamente una **penna a sfera nera** e **contrassegnare con una X le caselle** secondo gli esempi riportati nella tabella:

<p>Rispondere a una domanda</p> <p>Ogni domanda ammette <u>una e una sola</u> risposta.</p> <p>Per rispondere il candidato inserisca una X da un angolo all'altro della casella corrispondente alla risposta esatta, avendo cura di rimanere entro i bordi della casella stessa.</p>	<p><i>Esempio di marcatura valida</i></p> <table border="1"><thead><tr><th></th><th>A</th><th>B</th><th>C</th><th>D</th><th>E</th></tr></thead><tbody><tr><td>1</td><td>X</td><td></td><td></td><td></td><td></td></tr></tbody></table>		A	B	C	D	E	1	X										
	A	B	C	D	E														
1	X																		
<p>Correggere una risposta</p> <p>Il candidato <u>annerisca completamente</u> la casella corrispondente alla risposta errata e metta una X sulla casella relativa alla risposta esatta.</p> <p>Attenzione: come mostra l'immagine per ogni domanda è <u>possibile una sola correzione</u> annerendo la casella contenente la risposta sbagliata e mettendo una X sulla casella corrispondente alla risposta esatta.</p>	<p><i>Esempio di risposta corretta</i></p> <table border="1"><thead><tr><th></th><th>A</th><th>B</th><th>C</th><th>D</th><th>E</th></tr></thead><tbody><tr><td>1</td><td>■</td><td>X</td><td></td><td></td><td></td></tr></tbody></table>		A	B	C	D	E	1	■	X									
	A	B	C	D	E														
1	■	X																	
<p>Non rispondere a una domanda o annullare una risposta</p> <p>Per non rispondere a una domanda o annullare una risposta già data il candidato <u>lasci in bianco o annerisca completamente</u> tutte la fila di caselle associate alla domanda.</p> <p>Attenzione: l'annerimento della singola casella non annulla la risposta.</p>	<p><i>Esempi di risposte non date o annullate</i></p> <table border="1"><thead><tr><th></th><th>A</th><th>B</th><th>C</th><th>D</th><th>E</th></tr></thead><tbody><tr><td>1</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1</td><td>■</td><td>■</td><td>■</td><td>■</td><td>■</td></tr></tbody></table>		A	B	C	D	E	1						1	■	■	■	■	■
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AVVERTENZE:

Il sistema di correzione automatica equipara a “nessuna risposta” ogni caso non contemplato nel presente foglio di istruzioni.

È fatto divieto scambiare i fogli risposta con altri candidati perché questo impedirebbe la correzione del compito e la prova sarebbe annullata.

È vietato apporre sul foglio risposte qualsiasi altro segno che non sia tra quelli consentiti per indicare, correggere o annullare le risposte stesse.

Il foglio risposte deve essere riconsegnato integro, non macchiato e non piegato.



###
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[11002]

Il candidato controlli che il codice 00010900046 risulti uguale a quello del codice a barre stampato sul Foglio Risposte.
Ai fini della prova il solo documento valido è il Foglio Risposte.

GRAMMAR QUESTIONS

1. **What instruments do forecasters use to decide what the weather like?**
A) will to be
B) is going be
C) will been
D) will being
E) is going to be
2. **In some materials, such as gallium arsenide, a p-n junction will emit light an electric current passes through it.**
A) who
B) whenever
C) whatever
D) what
E) whoever
3. **The two technicians working in our lab have been here last December.**
A) for
B) since
C) from
D) by
E) within
4. **The height of waves and the distance between them are largely determined by wind**
A) strong
B) stronger
C) strength
D) strengthen
E) strongly
5. **White blood cells known lymphocytes form one of the most important components of the immune system.**
A) as such
B) such as
C) as
D) like
E) how
6. **..... a particle of matter is, the more difficult it is to split.**
A) The most small
B) The smallest
C) Smaller
D) The smaller
E) The more small

- 7. Oceanic lithosphere is being created continuously; the Earth is expanding, it must be destroyed at the same rate as it is created.**
- A) yet
 - B) despite
 - C) nevertheless
 - D) thus
 - E) unless
- 8. The temperature of a substance is a measure of internal energy.**
- A) her
 - B) his
 - C) your
 - D) its
 - E) their
- 9. Dinosaurs the fauna of the Earth from the Jurassic until the end of the Cretaceous.**
- A) had been dominated
 - B) have dominated
 - C) dominatet
 - D) are dominating
 - E) have been dominated
- 10. On average, oceanic ridges are some 1000 kilometres wide and stand 3000 metres above the adjacent ocean basins.**
- A) as long as
 - B) until
 - C) as far
 - D) till
 - E) up to
- 11. Kevlar is becoming very widespread its low flammability, high thermal stability and great tensile strength.**
- A) since
 - B) according to
 - C) thanks
 - D) owing
 - E) because of
- 12. In some quantum mechanics experiments, the same event in different ways.**
- A) happening
 - B) is happened
 - C) happen
 - D) occurs
 - E) verifies
- 13. was the Doppler effect first described by?**
- A) How
 - B) Where
 - C) Which
 - D) Whose
 - E) Whom
- 14. What reason was Bertrand Russell, the mathematician and philosopher, jailed in World War I?**
- A) when
 - B) since
 - C) long
 - D) until
 - E) for

15. Acids and basics react together to form compounds known as salts, which are acidic nor basic.

- A) either
- B) nor
- C) neither
- D) or
- E) both

16. The evolutionary history of the anthropoids long been an area of active debate.

- A) were
- B) are
- C) has
- D) is
- E) was

17. More than seamounts have been mapped on the Pacific Ocean floor alone.

- A) ten thousands
- B) ten thousand
- C) tens thousand
- D) tens of thousands
- E) tens thousands

18. "How many people are coming tomorrow?" "....., because the meeting's been cancelled."

- A) Anybody
- B) All
- C) Any
- D) Every
- E) None

19. Who radically classical physics with his theories of special and general relativity?

- A) do revise
- B) is revised
- C) has revise
- D) revised
- E) did revised

20. Most metamorphic rock in the roots of mountains.

- A) do generate
- B) are generating
- C) does generate
- D) have generated
- E) is generated

COMPREHENSION

Jumping genes

After gaining her PhD in botany at Cornell University, USA, in 1927, Barbara McClintock began to study the genetics of maize. At the time, most geneticists used the fruit fly as their 'model' organism, but maize was preferred at Cornell. The colour of the kernels on a cob of maize are a clear expression of its genetic inheritance, while the plant's large chromosomes, which carry the genes, are easier to study under the microscope. And the slow maturation of maize allows the researcher more time to reflect on a genetic experiment.

By 1931 McClintock had shown that the exchange of genes during the production of germ cells – known as meiosis – is accompanied by an exchange of chromosomal material. The experiments are regarded as a milestone in the history of genetics, since they establish the link between chromosomes and genetic inheritance.

But McClintock is probably better known for her work on 'jumping genes'. In 1941 she moved to the Cold Spring Harbor Laboratory in New York state, which was to become a famous gathering place for pioneers in molecular biology. Noting the occasional appearance of odd-coloured spots and splashes on the leaves and kernels of her maize plants, she began to wonder about mechanisms that controlled the genes for colour. She developed the idea that they were mobile genetic elements that could jump around the chromosome. When they jumped into a gene, they disrupted its switching on and off. The genome – the total complement of genetic material in a cell – was far more fluid than anyone had ever imagined.

When McClintock presented this work to the genetics community in 1951, she was met with blank stares and indifference – even whispers that she was a little mad. By the 1970s, however, McClintock's mobile genetic elements, named 'transposons', had been discovered in a number of organisms. She was rewarded for her pioneering work with the Nobel Prize for Physiology or Medicine in 1983.

21. According to the idea developed by McClintock, what was the cause of the odd-coloured spots and splashes which sometimes appeared on the leaves and kernels of her maize plants?

- A) Chromosomes jumping around from one maize plant to another.
- B) The total complement of genetic material in one cell flowing into another cell.
- C) Transposons disrupting the functioning of the genes for colour.
- D) McClintock herself, because she had devised a wonderful mechanism for controlling the genes for colour.
- E) Mobile genetic elements switching cells on and off and thus changing their colour.

22. When did McClintock demonstrate that genetic inheritance and chromosomes are linked?

- A) Between 1941 and 1951.
- B) After 1951.
- C) Between 1931 and 1941.
- D) Before 1927.
- E) Between 1927 and 1931.

23. What work did McClintock present to the genetics community in 1951?

- A) Work showing that the genome contained much more fluid than researchers had hitherto believed.
- B) Work revealing that meiosis and an exchange of chromosomal material occur at the same time.
- C) Work showing that genes contained elements that were more mobile than had previously been thought.
- D) Work demonstrating that maize is more suitable for research purposes than the fruit fly.
- E) Pioneering work conducted on the genetics community.

24. How did other scientists first react to McClintock's ideas on jumping genes?

- A) They awarded the Nobel Prize for Physiology or Medicine to her.
- B) They congratulated her on her discovery.
- C) They did not take them seriously.
- D) They rewarded her with a PhD at Cornell University.
- E) They invited her to work in the Cold Spring Harbor Laboratory.

25. Why was maize preferred to the fruit fly as a 'model' organism at Cornell University?

- A) The fruit fly has larger chromosomes than maize and grows more quickly.
- B) The fruit fly doesn't grow as quickly as maize and its chromosomes are larger.
- C) Maize doesn't grow as quickly as the fruit fly and its chromosomes are larger.
- D) Maize grows more slowly than the fruit fly and its chromosomes are not as big.
- E) The fruit fly has smaller chromosomes than maize and grows more slowly.

The Melissa Macro

The Melissa computer virus, which in March 1999 spread in Microsoft Word documents sent via e-mail attachment, was among the first viruses to cause widespread damage by means of the internet. Someone created Melissa as a "macro" (a small utility program) in a Word document uploaded to an Internet newsgroup. Anyone who downloaded the document and opened it would trigger the virus, which would thereupon send the document (and thus itself) in an e-mail message to the first 50 people in the person's address book. From each of these recipients, the virus would then create a further 50 messages - and so on. As a result, Melissa was the fastest-spreading virus ever seen.

Melissa took advantage of the programming language built into Microsoft Word called Visual Basic for Applications (VBA), which is a complete programming language and can be programmed to do things like modify files and send e-mail messages. It also has a useful, but dangerous, auto-execute feature. A programmer can insert a VBA program ("macro") into a document that runs instantly whenever the document is opened. This is how Melissa was programmed and is why merely opening a document infected with Melissa would immediately activate the virus. Nevertheless, Microsoft applications have a feature built into them which could guard against such risks, it is called Macro Virus Protection. If this is turned on, the auto-execute feature is disabled and any document trying to auto-execute viral code causes a dialog to appear warning the user. Melissa spread despite this safeguard because most people either ignored the dialog, or had the protection mechanism turned off.

Clearly, to protect yourself from such macro viruses you should make sure that Macro Virus Protection is enabled in all Microsoft applications you use and always act on any dialog warnings that appear. If you do this then any attachments that arrive as Word files (.DOC), spreadsheets (.XLS), images (.GIF and .JPG), etc., being data files, can do no damage. But you should never double-click on a file with an extension like EXE, COM or VBS which arrives as an e-mail attachment. Such a file is an executable and once you run it, you have given it permission to do anything on your machine.

26. What would have been the extension of a file which arrived as an e-mail attachment and which was infected with the Melissa virus?

- A) .EXE
- B) .DOC
- C) .XLS
- D) .VBS
- E) .JPG

27. What action would initiate the infection of a computer by the Melissa virus?

- A) Opening an e-mail which had a file infected with Melissa in attachment.
- B) Double-clicking on a Word document infected with Melissa.
- C) Downloading a Word document infected with Melissa from an Internet newsgroup.
- D) Creating Melissa as a macro and uploading it to an Internet newsgroup.
- E) Inserting a VBA program into a Word document and so auto-executing Melissa.

28. What would happen if a file containing viral code tried to auto-execute in a Microsoft application whose Macro Virus Protection was enabled?

- A) The VBA macro would run instantly.
- B) The dialog would be ignored by the application.
- C) The virus would be immediately activated.
- D) A dialog would appear warning the user.
- E) The auto-execute feature would be turned on.

29. Which ONE of the following statements is FALSE, according to the information given in the text?

- A) Melissa would have been unlikely to have spread as quickly as it did, in the days before e-mail use became widespread.
- B) Melissa spread solely because people had the Macro Virus Protection feature turned off.
- C) Melissa's spread was helped because for every one computer the virus succeeded in infecting, it could potentially infect a further 50.
- D) Melissa's spread was helped because a number of people opened the document, even though they had been warned it contained a virus.
- E) Melissa spread more quickly than any previous virus.

30. If a person receives a file named "money.com" as an e-mail attachment, what should she or he do?

- A) Double-click on "money.com" to get some money.
- B) Make sure that Macro Virus Protection is enabled and then open "money.com" by double clicking on it.
- C) Run "money.com" once, and only once.
- D) Give "money.com" permission to do anything on the machine, in order to test if it is a virus.
- E) Avoid double-clicking on "money.com".

