

1. Dinosaurs the fauna of the Earth from the Jurassic until the end of the Cretaceous.
a) had been dominated b) have dominated c) are dominating d) have been dominated
e) dominated
2. White blood cells known lymphocytes form one of the most important components of the immune system.
a) as b) such as c) like d) how e) as such
3. The temperature of a substance is a measure of internal energy.
a) their b) his c) her d) its e) your
4. Most metamorphic rock in the roots of mountains.
a) does generate b) are generating c) have generated d) do generate e) is generated
5. The two technicians working in our lab have been here last December.
a) since b) by c) for d) within e) from
6. What reason was Bertrand Russell, the mathematician and philosopher, jailed in World War I?
a) when b) until c) for d) long e) since
7. Kevlar is becoming very widespread its low flammability, high thermal stability and great tensile strength.
a) thanks b) since c) according to d) because of e) owing
8. In some quantum mechanics experiments, the same event in different ways.
a) happen b) verifies c) occurs d) is happened e) happening
9. was the Doppler effect first described by?
a) Whose b) Whom c) Where d) How e) Which
10. "How many people are coming tomorrow?" "....., because the meeting's been cancelled."
a) Any b) Anybody c) Every d) All e) None
11. What instruments do forecasters use to decide what the weather like?
a) will been b) will to be c) will being d) is going to be e) is going be
12. The evolutionary history of the anthropoids long been an area of active debate.
a) is b) are c) was d) were e) has
13. Oceanic lithosphere is being created continuously; the Earth is expanding, it must be destroyed at the same rate as it is created.
a) Unless b) Thus c) Yet d) Nevertheless e) Despite
14. On average, oceanic ridges are some 1000 kilometres wide and stand 3000 metres above the adjacent ocean basins.
a) as long as b) up to c) until d) as far e) till
15. Acids and basics react together to form compounds known as salts, which are acidic nor basic.
a) either b) or c) neither d) both e) nor
16. The height of waves and the distance between them are largely determined by wind
a) strong b) strongly c) strength d) stronger e) strengthen
17. Who radically classical physics with his theories of special and general relativity?
a) is revised b) did revised c) do revise d) revised e) has revise
18. In some materials, such as gallium arsenide, a p-n junction will emit light an electric current passes through it.
a) whenever b) whatever c) whoever d) who e) what
19. a particle of matter is, the more difficult it is to split.
a) Smaller b) The smaller c) The more small d) The smallest e) The most small
20. More than seamounts have been mapped on the Pacific Ocean

floor alone.

- a) tens thousand b) ten thousand c) tens thousands d) ten thousands e) tens of thousands

Five kingdoms of life

‘Animal, vegetable or mineral?’ The question implies that living things are either plants or animals, and historically biologists have taken the same view. Biologists did encounter some creatures, such as mushrooms, that violated the distinction, but they forced them into the plant or animal group. Mushrooms are fungi, for instance, and biologists until recently classed fungi as plants – more accurately ‘as plants that do not photosynthesize’.

Then there were the microbes. Biologists found increasing numbers of microscopic life forms in the wake of their discovery in the seventeenth century, and these were duly forced into the plant/animal distinction. Some microbes which could photosynthesise were defined as algae and grouped with plants. Others which seemed more like animals were defined as protozoa and grouped with animals. In the nineteenth century biologists discovered bacteria – even smaller microbes – but these no one managed to define as either animals or plants.

By the twentieth century biologists knew that all life could not be divided into animals and plants, but the old idea was not finally laid to rest until 1969 when an American ecologist, Robert Whittaker, proposed his five-kingdom classification. He divided life into animals, plants, fungi, protists and bacteria. Animals, plants, fungi and protists are ‘eukaryotes’; they are built of cells (or one cell in the case of protists) with a distinct nucleus. Bacteria are ‘prokaryotes’; their single cell has no distinct nucleus. Whittaker’s classification struck a chord. Fungi have nothing to do with plants; indeed, they are more closely related to animals.

Subsequent research has modified Whittaker’s scheme. Some biologists prefer to divide the protists into more than one kingdom, but the most important development came when Carl Woese discovered that there are two groups of prokaryotes (archaeans and bacteria), not one. That has led to a ‘three-domain’ classification of life: archaeans, bacteria and eukaryotes (the last of which contain the other four kingdoms of Whittaker’s scheme).

1. Why can the historical classification of fungi as plants be considered as forced?

- a) Because fungi are minerals.
- b) Because fungi belong to the animal kingdom.
- c) Because fungi do not photosynthesize.
- d) Because fungi are prokaryotes.
- e) Because fungi photosynthesize.

2. Which of the following lists includes all the groups in the ‘three-domain’ classification of life?

- a) Bacteria, archaeans, protists, fungi, plants and animals.
- b) Animals, vegetables and minerals.
- c) Algae, protists, and bacteria.
- d) Plants, animals, minerals, archaeans and bacteria.
- e) Animals, plants, fungi, protests and archaeans.

3. When was the view that all living things could be defined as either plants or animals definitively abandoned?

- a) In the nineteenth century.
- b) In the early twentieth century.
- c) In the seventeenth century.
- d) In 1969.
- e) In the 1970s.

4. Which of the following are NOT eukaryotes?

- a) Animals.
- b) Mushrooms.
- c) Protists.
- d) Archaeans.
- e) Algae.

5. Which of the following life forms were biologists unable to define as either animals or plants before the twentieth century?

- a) Fungi.
- b) Bacteria.
- c) Protozoa.
- d) Algae.
- e) Microbes in general.

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.

1) 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) .XLS
- C) .JPG
- D) .DOC
- E) .VBS

2) What action would initiate the infection of a computer by the Melissa virus?

- A) double-clicking on a Word document infected with Melissa.
- B) downloading a Word document infected with Melissa from an Internet newsgroup.
- C) inserting a VBA program into a Word document and so auto-executing Melissa.
- D) creating Melissa as a macro and uploading it to an Internet newsgroup.
- E) opening an e-mail which had a file infected with Melissa in attachment.

3) 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 more quickly than any previous virus.
- 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 solely because people had the Macro Virus Protection feature turned off.

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

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

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

Keys

Grammar questions :

1.e; 2.a; 3.d; 4.e; 5.a; 6.c; 7.d; 8.c; 9.b; 10.e; 11.d; 12.e; 13.a; 14.b; 15.c; 16.c; 17.d; 18.a; 19.b; 20.b.

Five kingdoms of life:

1. c; 2. a; 3. d; 4. d; 5. b.

The Melissa Macro:

1. d; 2. a; 3. e; 4. e; 5. d.