

The first question: Translate these scientific texts into Arabic and English language. (18 marks)

- Clostridium grows well at body temperature; in stressful environments, the bacteria produce spores that tolerate extreme conditions. These bacteria secrete powerful exotoxins responsible for diseases including those causing tetanus, botulism, and gas gangrene

تنمو بكتيريا كلوستريديوم بشكل جيد في درجة حرارة الجسم؛ وفي البيئات المجهدّة، تنتج البكتيريا جراثيم تتحمل الظروف القاسية. تفرز هذه البكتيريا سموماً خارجية قوية مسؤولة عن الأمراض بما في ذلك تلك التي تسبب التيتانوس والتسمم الغذائي والغرغرينا الغازية. 6 درجات

- Animal diseases are also an important environmental problem associated with livestock in agriculture. They are generally transmitted by direct contact with infected animals or through contaminated food, water, soil or animal excreta. Most workers are not aware of the proper hygienic and sanitary measures to prevent or control the transmission of these diseases

كما تشكل الأمراض الحيوانية مشكلة بيئية مهمة مرتبطة بالثروة الحيوانية في الزراعة. وتنتقل هذه الأمراض عادة عن طريق الاتصال المباشر بالحيوانات المصابة أو من خلال الغذاء الملوث أو الماء أو التربة أو فضلات الحيوانات. ولا يدرك معظم العاملين التدابير الصحية والصحية المناسبة لمنع أو السيطرة على انتقال هذه الأمراض. 6 درجات

- يمكن أن تسبب الملوثات البيئية مشاكل صحية مثل أمراض الجهاز التنفسي وأمراض القلب وبعض أنواع السرطان. وتقدر منظمة الصحة العالمية أن هناك 1.2 مليون وفاة على مستوى العالم سنوياً تعزى إلى المخاطر المهنية، والتي تتعلق بـ 2.1% من جميع الوفيات بين عامة السكان.

Environmental pollutants can cause health problems such as respiratory diseases, heart disease and some types of cancer. The World Health Organization estimates that 1.2 million deaths worldwide each year are attributable to occupational hazards, which accounts for 2.1% of all deaths in the general population. 6 درجات

The second question: Choose the correct term for each of the following definitions. (3 درجات لكل جواب صحيح)

- 1- Tetanus and Botulism are examples of diseases caused by

C. Soil-borne microbes

- 2- Term "guano" means

B. Organic fertilizers

- 3- Exposure to high levels of Mn over several years can lead to

A. Nervous system toxicity similar to Parkinsonism

- 4- A dose that causes 50% of a population to exhibit any significant response is referred to as the

A. ED-50

- 5- A key concept underlying radiation protection programs is

C. A and B

6- A substance which can cause physical defects in a developing embryo:

C. Teratogen

7- Minamata disease is caused by.

C. Methyl mercury

The third question: What causes each of the following? (3 درجات لكل جواب صحيح)

Shigella, Formaldehyde, Arsenic, Schistosomiasis, Phthalates, DDT compounds, Algal Blooms

- **Shigellosis**, or Shigella infection caused by Shigella bacteria, is a disease that affects your digestive system. It produces stomach pain, diarrhea and fever in people who are infected. Shigella is very contagious.
- **Formaldehyde** can cause irritation of the eyes, nose, and throat, even at low levels for short periods. Longer exposure or higher doses can cause coughing or choking. Severe exposure can cause death from throat swelling or from chemical burns to the lungs.
- **Arsenic**: Inorganic arsenic compounds (such as those found in water) are highly toxic while organic arsenic compounds (such as those found in seafood) are less harmful to health. The immediate symptoms of acute arsenic poisoning include vomiting, abdominal pain and diarrhoea.
- **Schistosomiasis**: At first, there are often no symptoms of schistosomiasis but within one to two months of infection, symptoms may develop including fever, abdominal pain (liver/spleen area), bloody diarrhoea or blood in the stools or urine, coughing, malaise, headaches, rashes and body aches.
- **Phthalates** are a class of chemicals with endocrine-disrupting properties. These chemicals are associated with health harms including increased risk of cancer, asthma and allergies, and learning attention and behavioral difficulties in children.
- **DDT compounds**: breast cancer, diabetes, decreased semen quality, spontaneous abortion, and impaired neurodevelopment in children.
- **Algal Blooms** Some types of algae can cause irritation and allergic reactions on direct contact, while others may also produce harmful toxins (poisons). Drinking algae-affected water or consuming food (such as fish or shellfish) containing toxins can lead to gastroenteritis, which can induce vomiting, diarrhoea, fevers and headaches. These toxins may also affect the liver or nervous system.

The fourth question: What are occupational diseases? What are workers three basic rights? (6 marks)

Occupational Disease, any illness associated with a particular occupation or industry. Such diseases result from a variety of biological, chemical, physical, and psychological factors that are present in the work environment or are otherwise encountered in the course of employment (1.5 درجة).

The right to know information that could affect their health and safety (1.5 درجة); The right to participate in health and safety decisions in the workplace; (1.5 درجة) and the right to refuse work that they feel is unsafe (1.5 درجة).

The fifth question: Mention 4 diseases that are linked to contaminated water. (4 marks)

Cholera, diarrhoea, dysentery, hepatitis A, typhoid and polio. (لكل تعداد درجة واحدة فقط)