EIA / MEIA Worksheet

1 Microtitre plates

Read and fill the gaps with words made from the words in brackets.

A microtitre plate or microplate or microwell plate or multiwall, is a flat plate with multiple "wells" used as small test tubes. The microplate has become a standard tool in _____ (ANALYSIS) research and clinical _____ (DIAGNOSIS) testing laboratories. A very common usage is in the enzyme-linked immunosorbent assay (ELISA), the basis of most modern _____ (MEDICINE) diagnostic testing in humans and animals.

Each well of a microplate _____ (TYPICAL) contains between tens of nanolitres to several millilitres of liquid. They can also be used to store dry powder or as racks to support glass tube inserts. Wells can be _____ (CIRCLE) or square. Today, there are microplates for nearly every _____ (APPLY) in life science research which involves filtration, _____ (SEPARATE), optical detection, _____ (STORE), reaction mixing or cell culture.

2 Listening

A Listen and complete the gaps

1 the EIA can be done in a multi-well microtiter plate or any other solid adherent _____

2 the plate is prepared to perform a particular assay by _____ the wells with antibodies that bind to the antigen of interest

3 then the _____ are filled with the clinical sample which could be a sample of serum, respiratory secretions, cerebrospinal fluid, urine or some other body fluid

4 if the antigen is present in the sample, it will _____ to the fixed antibodies

5 the wells are then washed out to remove any of the unattached _____, leaving the antigen of interest stuck to the wells

6 the second _____, directed against another epitope on the target antigen is added

7 these antibodies are conjugated covalently to an _____

8 they bind to the antigen which is fixed in the well and this provides a second level of _____ for the assay

9 the wells are washed again to remove any _____ antibodies

10 a _____ of colorigenic enzyme substrate is added

3 Grammar – Passive voice

42.4 Rewrite these sentences. Instead of using **somebody**, **they**, **people** etc., write a passive sentence.

1 Somebody cleans the room every day. The room is cleaned every day.
2 They cancelled all flights because of fog. All
3 People don't use this road much.
4 Somebody accused me of stealing money. I
5 How do people learn languages? How
6 People warned us not to go out alone.

43.3 Rewrite these sentences. Instead of using **somebody** or **they** etc., write a passive sentence.

1 Somebody has cleaned the room.
The room has been cleaned.
2 Somebody is using the computer right now.
The computer
3 I didn't realise that somebody was recording our conversation.
I didn't realise that
4 When we got to the stadium, we found that they had cancelled the game.
When we got to the stadium, we found that
5 They are building a new ring road round the city.
6 They have built a new hospital near the airport.

Immunology

A Read and fill the gaps.

The principal role of the immune system is to ____ (1) the body against possible infections. The immune system has evolved over millions of years to respond and destroy any organisms _____ (2) have entered the body.
The complexity of immune systems mirrors evolutionary history: more 'primitive' organisms have immune systems composed ____ (3) discrete, general purpose, effector cells and molecules; more 'advanced' organisms have developed organs and tissues ____ (4) a specific immune purpose. A key part of Immunology involves studying ____ (5) the many different organs, cells and molecules of the immune system work and interact ____ (6) each other.
The earlier form of the immune system is known ____ (7) the 'innate' immune system, and is found in a wide range of organisms (including invertebrates and primitive vertebrates); the ____ (8) form is known as the 'adaptive' immune system and is common to higher vertebrates (including humans).
Specifically:

- The innate immune system includes natural barriers to infection, _____ (9) as skin and cells lining the mouth, as well as the effector cells and molecules
- The adaptive immune system includes specialised cells, organs and tissues _____ (10) are responsible for reacting to a specific foreign substance

B Answer these questions:

1 What is the major role of the immune system?
2 Describe the difference between the 'primitive' and 'advanced' immune systems.

Grammar – indirect speech

47.1 **Yesterday you met a friend of yours, Steve. You hadn't seen him for a long time. Here are some of the things Steve said to you:**

1 I'm living in London.
2 My father isn't very well.
3 Rachel and Mark are getting married next month.
4 My sister has had a baby.
5 I don't know what Joe is doing.
6 I saw Helen at a party in June and she seemed fine.

Steve

7 I haven't seen Amy recently.
8 I'm not enjoying my job very much.
9 You can come and stay at my place if you're ever in London.
10 My car was stolen a few days ago.
11 I want to go on holiday, but I can't afford it.
12 I'll tell Chris I saw you.

Later that day you tell another friend what Steve said. Use reported speech.

1 Steve said that he was living in London.
2 He said that .....
3 He .....
4 .....
5 .....
6 .....
7 .....
8 .....
9 .....
10 .....
11 .....
12 .....