

## 4. Topic sentences

Definitions

Examples

# Definition of a definition

*A definition is a statement of the meaning or significance of a word or phrase.*

# Some paper titles

- Title: Fatigue behaviour of Fiber-Reinforced Plastic in concrete beams
  - *Fibre-reinforced plastic (FRP) is a composite material made of a polymer matrix reinforced with fibers.*
- Title: Space utilization of nanocrystalline metals prepared by high-energy ball milling
  - *Nanocrystalline metals are polycrystalline metallic structures with a mean grain size below 100 nm.*
- Title: Live migration of virtual machine based on full system trace and replay
  - *Live migration refers to the process of moving a running virtual machine or application between different physical machines without disconnecting the client or application.*

# Simple definitions

Term

+ verb

+ category

- Fibre-reinforced plastic (FRP) is a composite material made of a polymer matrix reinforced with fibers.
- Nanocrystalline metals are polycrystalline metallic structures with a mean grain size below 100 nm.
- Live migration refers to the process of moving a running virtual machine or application between different physical machines without disconnecting the client or application.

# Simple definitions

Term +

- **Fibre-reinforced plastic (FRP)** is a composite material made of a polymer matrix reinforced with fibers.
- **Nanocrystalline metals** are polycrystalline metallic structures with a mean grain size below 100 nm.
- **Live migration** refers to the process of moving a running virtual machine or application between different physical machines without disconnecting the client or application.

# Simple definitions

Term + verb

- Fibre-reinforced plastic (FRP) is a composite material made of a polymer matrix reinforced with fibers.
- Nanocrystalline metals are polycrystalline metallic structures with a mean grain size below 100 nm.
- Live migration refers to the process of moving a running virtual machine or application between different physical machines without disconnecting the client or application.

# Simple definitions

Term      + verb      + category

- Fibre-reinforced plastic (FRP) is a composite material made of a polymer matrix reinforced with fibers.
- Nanocrystalline metals are polycrystalline metallic structures with a mean grain size below 100 nm.
- Live migration refers to the process of moving a running virtual machine or application between different physical machines without disconnecting the client or application.

# Simple definitions

Term      + verb      + category      + information

- Fibre-reinforced plastic (FRP) is a composite material made of a polymer matrix reinforced with fibers.
- Nanocrystalline metals are polycrystalline metallic structures with a mean grain size below 100 nm.
- Live migration refers to the process of moving a running virtual machine or application between different physical machines without disconnecting the client or application.



# Simple definitions

Term + verb

+ category

+ information

A car is a

motorised vehicle

that the client can  
use as a regular  
means of personal  
transportation.

A master's  
degree is an

academic award

for post-graduate  
students, which is  
given on completion  
of a dissertation

# Task 5: General nouns

1. A barometer is a scientific \_\_\_\_\_ designed to measure atmospheric pressure.

# General nouns

1. A barometer is a scientific **instrument** designed to measure atmospheric pressure.
2. Kidneys are \_\_\_\_\_ that separate waste fluid from the blood.

# General nouns

1. A barometer is a scientific instrument designed to measure atmospheric pressure.
2. Kidneys are the **organ** that separate waste fluid from the blood.
3. A multi-national company is a business \_\_\_\_\_ that operates in many countries.

# General nouns

1. A barometer is a scientific instrument designed to measure atmospheric pressure.
2. Kidneys are the organ that separate waste fluid from the blood.
3. A multi-national company is a business **organisation** that operates in many countries.
4. Reinforced concrete is a building \_\_\_\_\_ consisting of cement, sand and steel rods.

# General nouns

1. A barometer is a scientific instrument designed to measure atmospheric pressure.
2. Kidneys are the organ that separate waste fluid from the blood.
3. A multi-national company is a business organisation that operates in many countries.
4. Reinforced concrete is a building **material** consisting of cement, sand and steel rods.
5. Bullying is a pattern of anti-social \_\_\_\_\_ found in many schools.

# General nouns

1. A barometer is a scientific instrument designed to measure atmospheric pressure.
2. Kidneys are the organ that separate waste fluid from the blood.
3. A multi-national company is a business organisation that operates in many countries.
4. Reinforced concrete is a building material consisting of cement, sand and steel rods.
5. Bullying is a pattern of anti-social **behaviour** found in many schools.
6. Recycling is a \_\_\_\_\_ in which materials are used again.

# General nouns

1. A barometer is a scientific instrument designed to measure atmospheric pressure.
2. Kidneys are the organ that separate waste fluid from the blood.
3. A multi-national company is a business organisation that operates in many countries.
4. Reinforced concrete is a building material consisting of cement, sand and steel rods.
5. Bullying is a pattern of anti-social behaviour found in many schools.
6. Recycling is a **process** in which materials are used again.
7. A recession is a \_\_\_\_\_ of reduced economic activity.



# General nouns

1. A barometer is a scientific instrument designed to measure atmospheric pressure.
2. Kidneys are the organ that separate waste fluid from the blood.
3. A multi-national company is a business organisation that operates in many countries.
4. Reinforced concrete is a building material consisting of cement, sand and steel rods.
5. Bullying is a pattern of anti-social behaviour found in many schools.
6. Recycling is a process in which materials are used again.
7. A recession is a period of reduced economic activity.

# Task 6

1. Oxygen is a gas which is essential for our survival.
2. A university is a place where in theory people go to study but in reality often spend most of their time just having fun.
3. A researcher is a person who / that spends a lot of their time looking for funds for projects.
4. The USA is a country where it is believed by many that everyone has the same opportunities.
5. The Internet is a tool which / that has revolutionized the world.
6. Apple is a company which / that has made vast quantities of money through cutting-edge technologies.
7. Gold is a metal which / that tends to go up in value during financial crises.
8. A dog is an animal which / that is widely considered to be man's best friend.

# Reduced relative clause

- Oxygen is a gas **which is** essential for our survival.
- Oxygen is a gas essential for our survival.
- A dog is an animal **that is** widely considered to be man's best friend.
- A dog is an animal widely considered to be man's best friend.
- Fibre-reinforced plastic (FRP) is a composite material made of a polymer matrix reinforced with fibers.
- Fibre-reinforced plastic (FRP) is a composite material **which is** made of a polymer matrix **which is** reinforced with fibers.

# Articles

- \_\_\_\_\_ helium is \_\_\_\_\_ gas which consists of one proton and one neutron.
- \_\_\_\_\_ labor union is \_\_\_\_\_ organization of \_\_\_\_\_ workers formed to improve their economic status and working conditions.
- \_\_\_\_\_ white dwarf is \_\_\_\_\_ star that is unusually faint given its extreme temperature.
- \_\_\_\_\_ rice is \_\_\_\_\_ cereal grain that usually requires \_\_\_\_\_ subtropical climate and \_\_\_\_\_ abundance of moisture for growth.
- \_\_\_\_\_ transduction is \_\_\_\_\_ technique in which \_\_\_\_\_ genes are inserted into \_\_\_\_\_ host cells by means of \_\_\_\_\_ viral infection.

# Making definitions more complete

- Tsukuba
- Tsukuba is a city.
- Tsukuba is a city in Japan.
- Tsukuba is a planned city in Japan.
- Tsukuba is a planned city in north-east Japan.
- Tsukuba is a planned city in north-east Japan that is well-known for its University.
- Tsukuba is a planned city in north-east Japan that is well-known for its University and high concentration of research institutes.
- Tsukuba is a planned city in north-east Japan ~~that is~~ well-known for its University and high concentration of research institutes.

# Task 7

- (a) The University of Tsukuba is a prestigious Japanese national university located 45 minutes by train north east of Tokyo.
- (b) Buddhism is a nontheistic religion practised in many Asian countries including India, China and Japan.
- (c) Maglev (derived from magnetic levitation) is a transport method that uses magnetic levitation to move vehicles without touching the ground.
- (d) Research is the systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions.
- (e) A smartphone is a mobile phone that performs many of the functions of a computer, typically having a touchscreen interface, Internet access, and an operating system capable of running downloaded apps.

# Extending definitions into a paragraph

- analysing the components
- providing examples (e.g. ...of the applications)
- giving a sense of the historical change and development
- outlining the current understanding or research related to the topic
- outlining problems related to the topic

# Task <sub>8</sub>

(1) A microscope is an optical instrument with which the apparent size of an object can be enhanced. A simple microscope consists of a double convex lens and a magnifying glass. A compound microscope, on the other hand, will contain more than one of each of these lenses, which are situated at the ends of a cylinder.

- analysing the components



# Task 8

(2) Pollution is a form of environmental contamination resulting from human activity. Some common forms of pollution are wastes from the burning of fossil fuels and sewage running into rivers. Even litter and excessive noise can be considered forms of pollution because of the impact they can have on the environment.

- providing examples

# Task 8

(3) An acrylic plastic is a polymer which can take a high polish, is clear and transparent, and can be shaped while hot. Because of these and other characteristics, acrylic plastic is used in situations where glass is not suitable or desirable, for instance, in certain types of windshields.

- providing examples of the applications

# Task 8

(4) Perspective is a technique in art that is used to represent three-dimensional objects and depth relationships on a flat surface. Modern linear perspective (which involves making objects seem smaller the more distant they are from the observer) was probably first used in the 1400s by the artist Masaccio and the architects Filippo Brunelleschi and Leon Battista Alberti in Florence, Italy. Before this time, artists paid little attention to realistic perspective. In recent decades, many modern artists have returned to the practices of early artists and have abandoned realistic perspective.

- giving a sense of the historical change and development

# Task 8

(4) Perspective is a technique in art that **is used** to represent three-dimensional objects and depth relationships on a flat surface. Modern linear perspective (which **involves** making objects seem smaller the more distant they are from the observer) **was probably first used** in the 1400s by the artist Masaccio and the architects Filippo Brunelleschi and Leon Battista Alberti in Florence, Italy. Before this time, artists **paid** little attention to realistic perspective. In recent decades, many modern artists **have returned** to the practices of early artists and **have abandoned** realistic perspective.

- giving a sense of the historical change and development

# Task 8

(5) Migration may be defined as the movement of people from one place to another with the aim of permanent settlement. There are two main types- within a country and between countries. For example, people often move from rural to urban areas within the same country as is happening in China at the moment. The population of the city of Shanghai in China grew by 10 million between 1980 and 2005, mainly due to poor people from the country looking for jobs in the city. An example of movement of people between countries is that from Ireland to the USA in the 19<sup>th</sup> century which took place as a result of poverty and hunger.

- analysing the components / giving examples

# Assessed Writing Task 1

Today

Topic 4 - Paragraphs  
- tasks 8, 9 and 10

Topic 7 – Problem – Solution texts

[we will return to topic 6 (cohesion)  
over the next few weeks]

# Comma use with 'such as'

Commas used when the information is not essential

- Citrus fruits, such as oranges and grapefruits, are high in vitamin C.
- We like to plan our vacations around three-day weekends, such as Labor Day.

No commas when the information is essential

- Foods such as pizza and ice cream aren't very good for you.
- This year we'd like to visit a place such as Greece or Rome.



# Comma or no comma?

- *In this forest, you'll see many types of coniferous trees such as pine and spruce.*
- You need a comma – 'such as' simply adds extra information
- *In this forest, you'll see many types of coniferous trees, such as pine and spruce.*

# Comma or no comma?

- *Trees such as oaks and elms don't grow at this altitude.*
- You don't need a comma – 'such as' is essential for the meaning (it restricts 'trees' to a certain type)

# Task 8

- (a) Some twentieth-century inventions have affected the lives of most people.
- (a) Some twentieth-century inventions, such as TV and the internet, have affected the lives of most people.

# Task 8

- (b) Many musical instruments use strings to make music.
- (b) Many musical instruments, for example the guitar, use strings to make music.

# Task 8

- (c) Various companies have built their reputation on the strength of one product.
- (c) Various companies have built their reputation on the strength of one product; a case in point is Microsoft Windows.
- (d) In recent years more women have become political leaders.
- (d) In recent years more women, e.g. Angela Merkel, have become political leaders.
- (e) Certain countries are frequently affected by earthquakes.
- (e) Certain countries such as Japan are frequently affected by earthquakes.
- (f) Citrus fruits constitute an important source of vitamin C.
- (f) Citrus fruits, especially oranges, constitute an important source of vitamin C.

# Task 9

- free delivery or discounted prices bookshops
- clothing and footwear
- books and music
- many supermarkets offer delivery services for online customers

Widespread use of the internet has led to a major change in shopping habits. It is no longer necessary to visit shops to make routine purchases. With more specialised items, internet retailers can offer a wider range of products than bricks-and-mortar shops. They can also provide extra incentives to customers, in addition to the convenience of not having to visit a real shop. As a result, stores selling certain types of products are disappearing from the high street. Other products, however, appear to require personal inspection and approval, and, in addition many people enjoy the activity of shopping. It, therefore, seems unlikely that the internet will completely replace the physical shops.

# Task 9

1. free delivery or discounted prices bookshops
2. clothing and footwear
3. books and music
4. many supermarkets offer delivery services for online customers

Widespread use of the internet has led to a major change in shopping habits. It is no longer necessary to visit shops to make **routine purchases**. With more **specialised items**, internet retailers can offer a wider range of products than bricks-and-mortar shops. They can also provide extra **incentives to customers**, in addition to the convenience of not having to visit a real shop. As a result, stores selling certain **types of products** are disappearing from the high street. **Other products, however**, appear to require personal inspection and approval, and, in addition many people enjoy the activity of shopping. It, therefore, seems unlikely that the internet will completely replace the physical shops.

# Task 9

Widespread use of the internet has led to a major change in shopping habits. It is no longer necessary to visit shops to make routine purchases; **for example many supermarkets offer delivery services for online customers.** With more specialised items, **such as books and music,** internet retailers can offer a wider range of products than bricks-and-mortar shops. They can also provide extra incentives to customers, **for instance free delivery or discounted prices,** in addition to the convenience of not having to visit a real shop. As a result certain types of store, **for example those selling books and music,** are disappearing from the high street. Other products however, **for instance clothing and footwear,** appear to require personal inspection and approval, and in addition many people enjoy the activity of shopping, so it seems unlikely that the internet will completely replace the shopping centre.



**Topic sentence:** The University of Tsukuba is a prestigious Japanese national university located about 60km north east of Tokyo.

- 1973: older Tokyo University of Education → Tsukuba
- well-known: STEMM and physical education
- Since 1973: 3 Nobel prize winners, 60 Olympic athletes
- Currently – 16,500 students – 2000 from overseas

Verb – tense and voice

The University of Tsukuba is a prestigious Japanese national university located about 60km north east of Tokyo. It \_\_\_\_\_ in 1973 when the older Tokyo University of Education \_\_\_\_\_ to Tsukuba. **Since then**, the university \_\_\_\_\_ well known for its specialisms in the STEMM fields and physical education. It \_\_\_\_\_ (produce) three Nobel prize winners and \_\_\_\_\_ over 60 athletes to the Olympics. **Currently**, there \_\_\_\_\_ over 16,500 students \_\_\_\_\_ at the university, about 2000 of whom \_\_\_\_\_ from overseas.