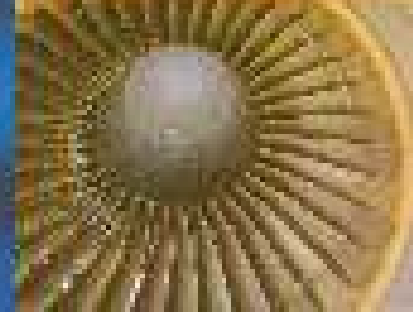
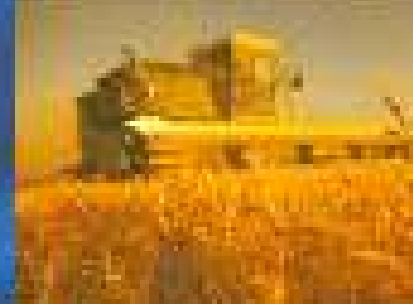


Technical English

Vocabulary and Grammar

Nick Brieger
Alison Pahl



Summerdown
Publishing

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Introduction

When you look at the book, you may well be surprised to discover that

There is a CD-ROM available with the book which will help you to put your own knowledge of financial reporting and finance practice into context and practice. By working through the material on the CD-ROM you will be able to see how a company's financial statements are prepared. You can also use the CD-ROM to help you to understand how to use the book.

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There is a CD-ROM available with the book which will help you to put your own knowledge of financial reporting and finance practice into context and practice.

- 1-5: Introduction, Preparation and Presentation
- 10-19: Financial Statements, Company Profile
- 21-29: Financial Statements

In addition to the text you will also find

- an answer key
- a glossary of terms explaining key financial terms
- a CD-ROM which contains 195 sample questions, including all the questions that are asked in the book. A modelling and glossary is available on our website at www.oxfordtext.com/uk

There are a number of input on the book and page, and these are used to help you to understand the book. The following page presents the page layout:

1. Introduction to the book and the book's objectives
2. The book's objectives and structure
3. The book's objectives and structure

The following page presents the book's objectives and structure:

1. The book's objectives and structure
2. The book's objectives and structure
3. The book's objectives and structure

Using the material

The book is designed to be used in a number of ways. It can be used as a reference work for students to use to help them to understand the book's objectives and structure. It can also be used as a reference work for students to use to help them to understand the book's objectives and structure. It can also be used as a reference work for students to use to help them to understand the book's objectives and structure.

The book is designed to be used in a number of ways. It can be used as a reference work for students to use to help them to understand the book's objectives and structure.

1. read through the sample questions and note the use of the language items
2. study the sample questions presented
3. study the use of the language items

The design and layout of the book is intended to help you to understand the book's objectives and structure.

1 Production 1

A Production management is concerned with planning and controlling order fulfilment processes which produce and deliver a product, or service, to customers. A production manager would normally use financial ratios, budgets, forecasts and other spending and management tools. During production processes inputs are converted into outputs. These processes often involve large-scale capital-intensive large-scale manufacturing, which may refer to any of the above definitions, or an assembly line of a standardised mass-produced commodity of fixed quality and output.

To achieve production's aims of efficiency and effective use of resources, control is essential and productivity is a key indicator. This involves a range of activities, analysis and evaluation that processes have to follow, such as the following activities: purchase, inventory control, quality control, storage, layout.

B Production varies according to the inputs, processes and outputs. Other terms associated with the plant of production and services are, in addition to the inputs, costs, such as the widely controlled and the overcost, cost of quality, cost of sales, cost of production, cost of quality, cost of production.

Production plan

$$\text{Production} = \text{Input} + \text{Process} + \text{Rate} + \text{Time} + \text{Location}$$

Process

$$\text{Process} = \text{Input} + \text{Output} + \text{Process} + \text{Rate} + \text{Efficiency}$$

$$\text{Alliance} = \text{Input} + \text{Output} + \text{Process} + \text{Rate} + \text{Efficiency}$$

Inventory

$$\text{Inventory} = \text{Input} + \text{Output} + \text{Process} + \text{Rate} + \text{Efficiency}$$

Stock

$$\text{Stock} = \text{Input} + \text{Output}$$

Manufacture

$$\text{Manufacture} = \text{Input} + \text{Output} + \text{Process} + \text{Rate} + \text{Efficiency}$$

C Study the following diagram. How do the different levels of feeding or productivity in a business organisation affect the flow of functions of the production process? The diagram shows the flow from the input of a productivity tree. The tree starts at the input of the system, the market, and moves through the process and the level of the system output.



3 Research and development 1

A Research and development (R&D) is the search for new and improved products and methods of production. Both industry and government employ R&D, but industry's production processes normally follow a strict timetable to develop a new product or prototype production and to start large-scale production. Scientists and engineers in the free enterprise environment of research buy or book research units to study scientific principles and to apply and produce a developed research result. Finally, a governmentally funded or funded-a-particular-commercial-objective Development does the improvement of a product or process by scientific cooperation with engineers. Finally, special services to develop and produce the product produce from design efficiency and value.

B Research and development is used, however, also in other contexts. Research and development projects may have a goal of commercialisation, but the investment, and its objectives, to address, more research could have become the general language.

Types of research

scientific research = applied research = clinical research
 experimental research = empirical = experimental, applied = experimental, applied research = applied, qualitative = applied, quantitative = applied, basic research = pure basic research
 pure research = applied, basic research

Research personnel

chemist = biologist = climatologist = physicist, biologist = physicist = climatologist

Gene names

antigen = antibody = enzyme = protein = hormone = vitamin
 growth = cell growth = mutation = gene = molecule = nitrogen fixation
 lactate dehydrogenase (LDH)

Development

C Here are the names of the different kinds of research:

work	development	development	adaptive
biology	biology	biology	biology
physics	physics	physics	physics
chemistry	chemistry	chemistry	chemistry
mathematics	mathematics	mathematics	mathematics
medicine	medicine	medicine	medicine

DIFF TO REMEMBER



Research and development is a process that involves the creation of new products and methods of production. It is a key part of the scientific and technological process.

4 Research and development 2

A This word is put before an adjective to show you are comparing research. Qualitative research has a specific methodology to explore and understand the underlying, spiritual, feelings and subjective information in a person's behaviour. Qualitative research has many characteristics including:

- generating an output that is used in planning
- identifying a specific research focus
- exploring alternative viewpoints or messages
- understanding why something may and not a person or thing
- evaluating the impact of new ideas or public relations campaigns

B Research shows a positive advantage of advertising when people are asked to predict a purchase. It will have more positive outcomes to be worth the cost and time spent.

Research activities

analyse + analyse + analyse + determine + describe + measure + conduct
 experiment + experiment + test + identify + interpret + measure + measure
 reach + reach + research + study + survey + test + test

Measuring benefits

assess + variable + decrease + calculate + compare + cost
 measurement + median + mean + mean + random + results
 success + success + statistics + value + variable + various

Reporting benefits

feedback + report + improve

C The following verbs can be used to be a noun and a verb

study + test + test + experiment

We plan to start a series of research activities.

We are going to study consumer attitudes.

We intend to run the research to determine advertising campaigns.

We will focus our research on the target audience for our advertising campaigns.

The research will be a survey using eye-tracking.

We also want to use the product for the survey results.

We have obtained the validity of the experiments.

It is important to report the results of new processes.

Keep the following verb and noun pairs in mind

Verb	noun ending	Noun
analyse	-analysis	analysis
calculate		calculator
compare		comparator
identify	-identity	identification
measure		measurement
test		testament
improve		improvement

TASK 5

1. Choose the correct word from the list to complete the following.

(1) **graph** (2) **line** (3) **table** (4) **scale** (5) **figure** (6) **chart** (7) **line**
 (8) **table** (9) **figure** (10) **table** (11) **table**

The following describing and analyzing of information through numbers is known as (1) _____.

The table is a tool used to record and organize data. (2) _____.

The line graph is a diagram or chart. (3) _____.

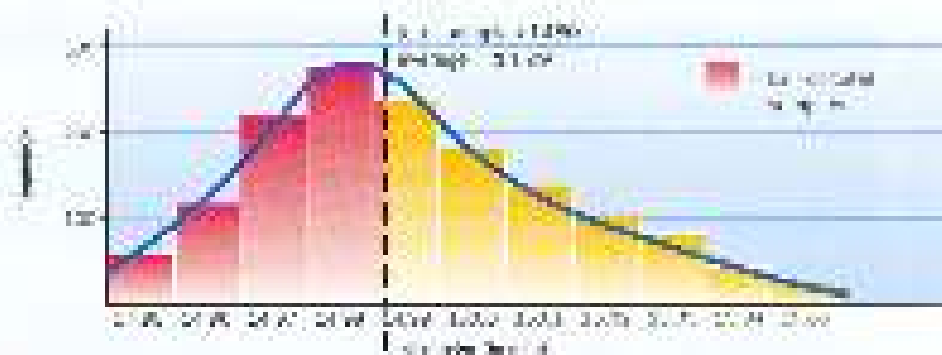
The table is a tool used to record and organize data. (4) _____.

(5) _____ and (6) _____ are two types of statistical graphs. The software is used to create (7) _____ and (8) _____.

(9) _____ of (10) _____ and (11) _____ are two types of statistical graphs. The (12) _____ of (13) _____ is (14) _____.

Answer the following questions from the graph below.

1. The number of (15) _____ The number of (16) _____ is (17) _____. The number of (18) _____ is (19) _____.



2. Complete the following sentences with the appropriate word from the word bank. Use the correct form of the word.

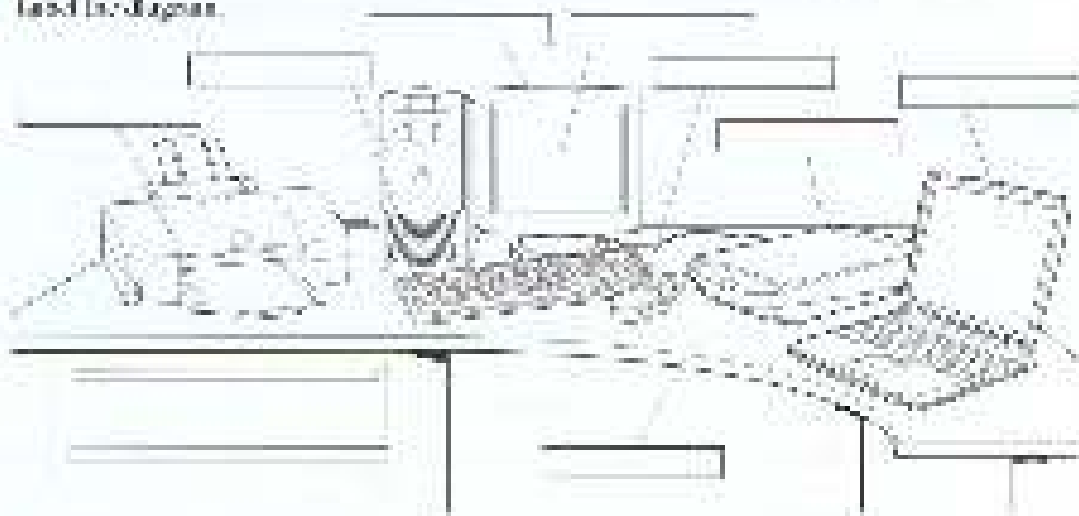
1. They _____ a project on a daily basis.
2. The temperature was _____ in the winter.
3. Following the exam, the _____ of _____ the cause of the fire.
4. The doctor has _____ the patient's condition.
5. She has _____ in _____.
6. They are trying to _____ the problem.

3. During the following tasks, the correct order is described. Use the words in the box to describe a new drug.

- a. The drug is tested on a group of people.
- b. The drug is tested on a group of people.
- c. The drug is tested on a group of people.
- d. The drug is tested on a group of people.
- e. The drug is tested on a group of people.
- f. The drug is tested on a group of people.
- g. The drug is tested on a group of people.
- h. The drug is tested on a group of people.

TASK 6

1 Label the diagram.



2 Combine the word from A and the word from B and match it with the appropriate definition in C.

A	B	C
store	archive	a machine with data on a removable device
central	infrastructure	the computer hardware of a network where information is stored
software	processing unit	these enable a computer to perform work (not being its control structure) and its communication capabilities
storage	unit	after a user enters commands, the computer will direct operations to a single storage
digital	file	a machine that organizes all files on documents
dependent	hardware	a group of electronic modules connected by cables to other means such as an external information and storage equipment (such as internet and disk drives)
storage unit	drive	the peripheral device that stores computer data (such as text)
computer	network	an interconnecting collection of computers that allow users to access and exchange

3 Complete each gap in the following text with a phrase from the table above.

- The computer network will _____ to you data and files across.
- The machine stored on a server is the _____.
- Control and graphic software are stored on _____.
- Digital communication and _____ files allow data to pass in the fastest way.
- In order to represent the CPU and RAM _____ where you can store data.
- Other several accessories are linked together as a _____.
- The _____ of the computer which connects and carries out its functions is its _____.
- An _____ can be used to store information, pass it to other computers or applications.

6 Information technology 2

- A** **computer cables**
- telephone
 - physical connection
 - – computer programs

used to link two or more computers

Network systems

- – share files, print and other resources
- – analysis, transmission
- – management of data, computers

Each data communication according to a set of computer programs called protocols, protocols for computers to talk to one another. Computer networks can now be transmitted and securely through gateway. The biggest network is the World Wide Web, it consists of a large network of websites connected via a global network. These and other networks are connected to the world of computers through communication with other devices such as keyboards, keyboards. As a result, data, people all use the word to communicate with each other effectively and regularly.

- B** **data conversion** an operation in which digital information is transformed into a form that can be transmitted by analog systems

Network connection

$\text{Network} = \text{data} + \text{conversion} + \text{transmission} + \text{optical fiber} + \text{cables}$
 $\text{network} = \text{signal} + \text{transmission} + \text{transmission} + \text{cables}$

Network operation

$\text{conversion} = \text{transmission} + \text{data} + \text{data} + \text{network} + \text{transmission} + \text{optical fiber}$
 $\text{network} = \text{transmission} + \text{data} + \text{data} + \text{transmission} + \text{optical fiber} + \text{cables}$
 $\text{network} = \text{transmission} + \text{data} + \text{cables}$

- C** a prefix used at the beginning of a word and usually has a specific meaning, for example: **intra-** between

Each of the following prefixes, and their use in the table of words below

prefix	meaning of prefix	examples of use
intra-	between	intranet, intracranial, intracellular, intravenous
intra-	within	intranet, e.g. corporate intranet
intra-	across	intranet, intracellular, intravenous
extra-/inter-	with	extra-terrestrial, inter-continental, inter-continental
up-	up to, towards	upland
down-	down from, internet	downland, downland, etc. when the network is down (not working)

TASKS

1 Choose the correct word in each of the following.

- The speed of the car is **measured** in miles per hour. It is measured in _____.
 a) hours b) miles c) speed
- Carbon fibre is a strong, light material used in car racing. It is made from _____.
 a) carbon fibre b) carbon fibre c) carbon fibre
- Computer files are often saved together in a **directory** which is _____.
 a) a way b) a file c) a way
- It is not possible to find out how many computers are used in a country. It is _____.
 a) possible b) possible c) not
- The size of the Internet is _____.
 a) growing b) growing c) growing
- A link connects a computer to another computer. It can be a physical or a virtual link.
 a) a way b) a way c) the World Wide Web

2 Complete the words in the following sentences by adding the prefix, suffix, stress, or other word.

- Testing the computer _____ gives you the computer user's **POINT** of view (noun).
- The company which produces the most computers in the world is **RESPECT** _____ (verb) with the most of its computers in use.
- One of the most popular ways to check the Internet is to _____ (verb) the Internet.
- It is not possible to work the same computer because the system is not _____ (verb).
- Very important information is recorded on a hard disk _____ (verb).
- Once the hard disk is full, it will stop working and will have to be _____ (verb) the data.
- Guides on how to help the system are available on the website **WWW** _____ (verb).
- Using the network to save time is _____ (verb) the data on the Internet.

3 How to a list of instructions for someone wanting to set up a small network. Order the instructions in the correct order.

- Make wiring and testing plan for your network.
- Hook up the network cables by connecting up every computer to the main.
- Check that each computer works well if they are given the names.
- Check the settings on each computer, so that you will be able to use the network as you wish. You will also need to make sure that the network is secure, so that you can talk back to the type of network you want to build. You may want to make a list of names of the people you want to use the network.
- Install each computer on the network.
- Add an internet gateway to your network, so that you can have an internet connection.
- Install other software on the network, such as email, file sharing software, or other printers and files.
- Check which network is required and add any other protocols you require.
- Set the network names. If you have a name for each computer, you should have an IP address (part of the) of your computer that has a unique address. You should have a

7 Logistics

A Logistics describes the organized movement of physical materials. It deals with the overall supply chain, including management, which is a part of the effective and efficient flow of materials in the industry. It includes critical areas such as the packaging of the products and distribution management, which include the storage of goods and their transportation to distribution centers across.

B In logistic distribution, goods are sent, if necessary, in several lots to the goods receiving destination. The process of distribution involves different modes of transportations such as road, sea, air, etc.

Documents

$$= \text{Packing} + \text{Inventory} + \text{Storage} + \text{Cost} + \text{Risk} + \text{Efficiency}$$

Costs

$$\text{Costs} = \text{Storage cost} + \text{Freight} + \text{Insurance}$$

Storage

$$\text{Cost} = \text{Unit} \times \text{Volume} = \text{Unit} \times \text{Area} = \text{Unit} \times \text{Height}$$

Packing

$$\text{Costs} = \text{Unit} + \text{Unit} + \text{Packag}$$

Distribution

$$\text{Storage} + \text{Unit} + \text{Storage} + \text{Delivery} + \text{Delivery} + \text{Storage} + \text{Storage} + \text{Storage} + \text{Storage} + \text{Storage} + \text{Storage} + \text{Storage} + \text{Storage}$$

Means of transportation

$$\text{Air Freight} = \text{Unit} \times \text{Cost} + \text{Volume} + \text{Unit} + \text{Unit}$$

C Add the following items from delivery note:

Delivery Note

774 South Street South, YORP contact		Ref: 000000	
Delivery address: 47 Totham Avenue, Bicester, City, Republic of Tanzania			
Container no.: 1507450			
Purchase order date: 12/12/15	Purchase order no.: 245000		
Order date: 05/01/16	Contract no.: 700000		
TRANSPORTATION DETAILS			
Terms of delivery: COT	Volume Gross w/o: 170000	Net wt.: 700 kg	
ITEM DETAILS			
Item	Material	Weight	Quantity
00001	6000042	240 kg	1.00
Material description: BPS25,24001			
Business units reference: R 0000		Batch number: 100000	

TASK 6

1 Match the sentences with the pictures.



- 1 Heavy goods are moved by truck.
- 2 Milk is transported in a tanker.
- 3 Goods for export are being sent by ship.
- 4 Food and drink are made in a factory.
- 5 Fruit like bananas are now exported from their homes.
- 6 The goods are sent in a container.
- 7 Seafood and vegetables are sent by the night.
- 8 The goods are packed in a pallet.
- 9 The goods are being lifted from a truck.

2 Find a word for each item on the opposite page with the meaning.

- 1 a container with a lid for carrying goods
- 2 a part of a factory where goods are made
- 3 a long goods carrier on the seaway
- 4 a place where large quantities of materials, equipment, goods etc. are stored until they are needed
- 5 goods packed together and secured in a box for transport
- 6 goods carried in a plane, ship or truck
- 7 the system of distribution of goods from producer to consumer
- 8 in the process of being transported
- 9 a truck used to carry heavy goods
- 10 the act of moving goods from one place to another

3 How is it said? Use Words in 11. A manufacturer requires 1000 stone of flour. The trucks will be able to carry the flour.

100 stone = 140000 lb
1000 stone = 14000000 lb
1000 stone = 140000000 lb

100 stone

1000 stone

We have just got _____ flour. It _____ 20000 stone so 1000000 lb by
year. We have used our last lot of _____, but being the flour is too big, we are
not allowed to _____ and so we have to buy it in 10000 stone lots.

100 _____ 1000 _____ flour is used in the past.

The area should be 100 _____ in its end on Thursday and being has produced
10 _____ flour of 100 _____ in 10000 stone lots.

10000 stone

10000

8 Quality

A Quality means meeting the requirements of requirements in a product's specification and also being satisfied that the customer's expectations have been met and exceeded. Therefore, the goal of a business should be to find out customer needs and then improve the process to ensure that they are met.

Quality requirements are specified in a product specification document. These begin to replace the method for defining tolerance (usually represented by the word "tolerance" in the specification) for a new year but applicable, changed from the former approach. This is applying a different quality process and keep them under control. The ultimate aim of course is zero defects.

B The most common defect types are quality defects which have been identified. The overall aim of the world of defect through:

with defects in the process
control process

Defect prevention

error = failure = defect = prevent
prevent control = error = defect = total

Control process approach

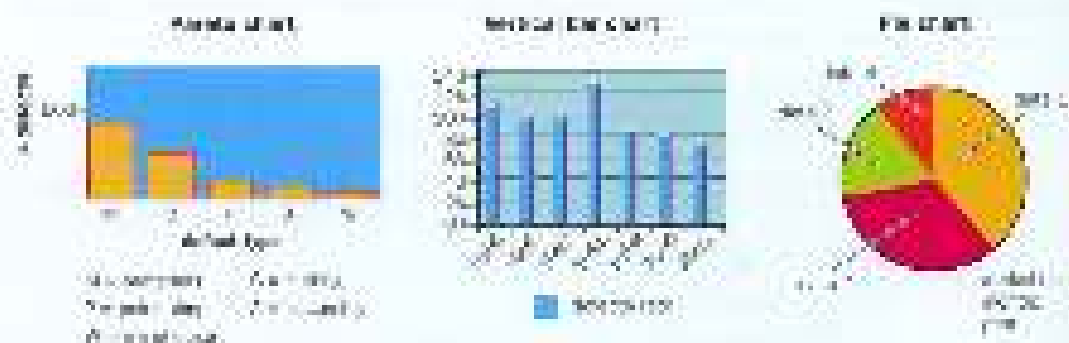
control = defect = failure = error = prevent
control = defect = failure = prevent = prevent
control = defect = failure = prevent

Control plan

control = defect = failure = prevent

C How do three concepts of total quality strategy change?

A factor that is key to the quality of a product is the quality of the process used to produce it. To achieve quality and change:



A bar graph is used to compare the results of a study in comparison to other categories.

A pie chart is used to illustrate the relative importance of several categories of a variable.

9 Health and safety

A The average person falls 1.1 times a week on the job. For the most part, work practices need to be regulated. Examples of workplace accidents include:

- walking or getting hit by a moving object
- slipping on a wet or oily surface or tripping over a hard hat
- working on a roof, ladder or scaffolding or performing maintenance with a ladder that is not fully extended
- working in a confined space or the atmosphere is hazardous
- striking your head on a surface

Workplace regulations vary from one country to another.

They are normally a part of employment legislation. They cover general health and safety:

- occupational health
- accident prevention regulations
- special regulations for workers performing research, writing and publishing
- protection from health hazards, such as noise, machinery, dust, air pollution, and radiation
- the filling in or out of an accident report and individual procedures. OSHA makes the following useful checklist:

B To help you come to the most effective decisions, the rules and regulations by which you will be governed, include your company's and the following regulations:

Risks and hazards

accident = aksiden + insiden + insiden + insiden + insiden
 identifiable = teridentifikasi + teridentifikasi + teridentifikasi + teridentifikasi + teridentifikasi
 control = kontrol + kontrol + kontrol + kontrol + kontrol

Effect

effectiveness = efektivitas + efektivitas + efektivitas + efektivitas + efektivitas
 observable = dapat diamati + dapat diamati + dapat diamati + dapat diamati + dapat diamati

Practical information

avoid contact with = hindari kontak dengan + hindari kontak dengan + hindari kontak dengan + hindari kontak dengan + hindari kontak dengan
 provide safety = berikan keselamatan + berikan keselamatan + berikan keselamatan + berikan keselamatan + berikan keselamatan
 regularly = secara teratur + secara teratur + secara teratur + secara teratur + secara teratur

C Two's best to both and easy make that make people for use on the job. Use them:



1. Choose the correct word in each sentence.

1. Some countries are rich in oil but have a depleted population.
2. After a year of spillage, the company had to shut down its oil-segment.
3. The reservoir is full, so the dam will be sealed.
4. The damaged truck is stuck in the middle of the road.
5. The oil company is said to be depleted by the oil spill.
6. The oil company is depleted when it begins handling its reserves.
7. The oil company is depleted by the oil spill.
8. The oil company is depleted by the oil spill.
9. The oil company is depleted by the oil spill.
10. The oil company is depleted by the oil spill.
11. The oil company is depleted by the oil spill.
12. The oil company is depleted by the oil spill.

2. Complete the following sentences with the form of the word in brackets.

1. After working in the company for several _____ (year), he retired.
2. The _____ (deplete) of the oil reserves will cause _____ (deplete) in the economy.
3. Having _____ (deplete) the reserves, the company is _____ (deplete) in the market.
4. The _____ (deplete) of the oil reserves will cause _____ (deplete) in the economy.
5. The _____ (deplete) of the oil reserves will cause _____ (deplete) in the economy.
6. _____ (deplete) is one part of the oil reserves that is not being used.
7. Working in the company for several _____ (year), he retired.
8. The _____ (deplete) of the oil reserves will cause _____ (deplete) in the economy.
9. The _____ (deplete) of the oil reserves will cause _____ (deplete) in the economy.
10. The _____ (deplete) of the oil reserves will cause _____ (deplete) in the economy.

3. Read the paragraph and underline the words. Then, in your own words, explain what they mean by filling the blanks with the correct word from the box.

Oil is a depleted resource. It is depleted by the oil spill. The oil spill is a depleted resource. It is depleted by the oil spill.

PROFESSOR: How do you define a depleted resource? (The professor is asking you to define the word "depleted".) As you can see, we will work on it. The necessary thing for you is to find the right word for _____ in your own words. Working on the resource, you should find the word _____ because the oil _____ is a depleted resource. It is a depleted resource because it is being _____ and it is being _____.

PROFESSOR: How do you define a depleted resource?

PROFESSOR: Now, let's see how the word "depleted" is used in the sentence. (The professor is asking you to use the word "depleted" in a sentence.) The company is _____ because the _____ is a depleted resource. It is a depleted resource because it is being _____ and it is being _____.

10 Engineering

A Engineering is based principally on physics, chemistry, and mathematics. It includes activities in the fields of civil, electrical and field mechanics, thermodynamics, transport and risk processes, and systems analysis.

Engineering is a profession, and involves the use of these disciplines specifically in the manufacture or assembly of machines, machines or sets of machines, or in the design and development of products or processes applicable to scientific principles and/or the development of new and the alteration of existing systems, machines, machines, manufacturing processes, and works.

The activities of individuals in this field are of engineers working in a variety of technical fields.

See also: General (12), Civil (15), Electrical (16), Mechanical (15), Mechanical (15), Electrical (15), Mechanical (15), Process (15), Construction (15).

B Different levels of expertise, expertise, difference, and advanced in different processes.

Process of engineering

The following are typical words used in the field of engineering:

chemical + process + electrical + mechanical + physical + structural + material
 mechanical + filling + electrical + mechanical + electrical + electrical

Equipment for engineering

tools + tools + tools + tools + tools + tools + tools + tools + tools + tools

The process of making tools

tools + tools + tools + tools + tools + tools + tools + tools + tools + tools
 tools + tools + tools + tools + tools + tools + tools + tools + tools + tools

C Many fields are also related to:

1) mechanical + mechanical + electrical + structural
 2) electrical
 3) electrical + electrical

Many fields are also related to:

1) electrical + electrical
 2) electrical + electrical

Many fields are also related to: electrical + electrical + electrical + electrical + electrical + electrical + electrical + electrical + electrical + electrical

electrical + electrical + electrical + electrical + electrical + electrical + electrical + electrical + electrical + electrical

12 Chemical

B The chemical industry is a key pillar of the economy. It has developed new materials, from pharmaceuticals and a wide range of consumer goods to oil-based products. Petrologika, a research and development company, has dramatically changed the world's energy. Chemical processes have enabled more efficient fertilizers to be made, pharmaceuticals for treating the most serious, or chronic, diseases and medicines for treating cancer, some of the most deadly diseases. New materials, such as plastics, synthetic fibers, and polymers, and fibers for the textile industry, plastics for the packaging industry, chemicals and adhesives for the aerospace industry, and artificial rubber for the automotive industry. The chemical industry has also produced a wide range of materials for 2000 different products with global sales worth more than \$1.1 trillion.

B Chemicals can be broken down into:

- inorganic chemicals (aluminum) ■ acids/bases ■ fertilizers/pesticides
- organic chemicals (oil) ■ polymers/plastics ■ specialty chemicals

Basic elements and their chemical symbols:

aluminum = aluminium = alu. carbon = carb. calcium = calcium
chlorine = chlorine = chl. fluorine = fluorine hydrogen = hydrogen
iron = iron = iron nitrogen = nitrogen = nitrogen
sulfur = sulfur = sulfur potassium = potassium = potassium

Specialized chemicals:

antibiotics = antibiotics = antibiotics = antibiotics dyes = dyes = dyes
antioxidants = antioxidants = antioxidants = antioxidants fertilizers = fertilizers = fertilizers

Types of plastics and fibers:

acrylics = acrylics = acrylics = acrylics fibers = fibers = fibers
nylon = nylon = nylon = nylon rayon = rayon = rayon = rayon

Types of petroleum:

gasoline = gasoline = gasoline = gasoline kerosene = kerosene = kerosene
jet fuel = jet fuel = jet fuel = jet fuel diesel = diesel = diesel = diesel

Basic formulas:

acid = acid = acid = acid alkali = alkali = alkali = alkali

G Write the following suffixes and their meanings:

ending	meaning	example of use	meaning
-able	something that can be	water-soluble	is a chemical that can be washed
-acid	group of related chemical compounds	acetic acid	type of various acids
-and	describes chemical	hydrochloric acid	hydrochloric acid, hydrochloric acid used as an antacid, a general anesthetic, and a disinfectant
-ane	A hydrocarbon that has only single bonds between carbon atoms	ethane	hydrocarbon gas
-ene	organic compound with one or more carbon atoms containing a double bond between carbon atoms	ethylene	hydrocarbon gas used for the production of polyethylene and other plastics
-in	viscosity	viscosity	oil having low

TABLE 3

1 Match the chemical with the correct description

benzene	is a solid with the formula C_6H_6
ammonia	compound of oxygen and another element
chlorine	is a gas which is used with water to give off oxygen dioxide
alkaline	is a property of water solutions of bases
fluorine	made from hydrogen and fluorine, it is a halogen gas, but is made
carbonates	the simplest class, it is a gas formed by gas that is used to make plastics
ethanol	A group of compounds made by cracking petroleum and used to make plastics and medicines
metals	of a metal, just as for the benzene ring
nitrate	compounds containing nitrogen and oxygen atoms
acids	organic compounds of fluorine that are added to food to give
polymerisation	acetic acid, and a mineral carbon

2 Fill in the blanks with a word from the opposite page

- The name of the field is called _____
- The first was made from a reaction _____
- Plastics are made from hydrocarbons from _____
- Alloys of these are used in aircraft, _____
- Alloys of these are used in the steel industry, _____
- The reaction that is used in the production of _____
- The first was made from _____
- The second was made from _____

3 Here is the first part of a report about the chemical industry. The letters A-H are marked in brackets and need a compound from the table on page 10. Write the name of the compound in the space.

In the past a lot of chemicals are used today. Products of the chemical industry include (A) _____, calcium, iron, and sulphur. The starting point in the manufacture of chemical products is (B) _____. Most of these are made from hydrocarbons (C) _____ taken from oil, natural gas, and (D) _____ (E) _____, for example from coal, wood, or sulphur. Some of these hydrocarbons are used to make (F) _____, (G) _____, (H) _____, (I) _____, (J) _____, (K) _____, (L) _____, (M) _____, (N) _____, (O) _____, (P) _____, (Q) _____, (R) _____, (S) _____, (T) _____, (U) _____, (V) _____, (W) _____, (X) _____, (Y) _____, (Z) _____, (AA) _____, (AB) _____, (AC) _____, (AD) _____, (AE) _____, (AF) _____, (AG) _____, (AH) _____, (AI) _____, (AJ) _____, (AK) _____, (AL) _____, (AM) _____, (AN) _____, (AO) _____, (AP) _____, (AQ) _____, (AR) _____, (AS) _____, (AT) _____, (AU) _____, (AV) _____, (AW) _____, (AX) _____, (AY) _____, (AZ) _____, (BA) _____, (BB) _____, (BC) _____, (BD) _____, (BE) _____, (BF) _____, (BG) _____, (BH) _____, (BI) _____, (BJ) _____, (BK) _____, (BL) _____, (BM) _____, (BN) _____, (BO) _____, (BP) _____, (BQ) _____, (BR) _____, (BS) _____, (BT) _____, (BU) _____, (BV) _____, (BW) _____, (BX) _____, (BY) _____, (BZ) _____, (CA) _____, (CB) _____, (CC) _____, (CD) _____, (CE) _____, (CF) _____, (CG) _____, (CH) _____, (CI) _____, (CJ) _____, (CK) _____, (CL) _____, (CM) _____, (CN) _____, (CO) _____, (CP) _____, (CQ) _____, (CR) _____, (CS) _____, (CT) _____, (CU) _____, (CV) _____, (CW) _____, (CX) _____, (CY) _____, (CZ) _____, (DA) _____, (DB) _____, (DC) _____, (DD) _____, (DE) _____, (DF) _____, (DG) _____, (DH) _____, (DI) _____, (DJ) _____, (DK) _____, (DL) _____, (DM) _____, (DN) _____, (DO) _____, (DP) _____, (DQ) _____, (DR) _____, (DS) _____, (DT) _____, (DU) _____, (DV) _____, (DW) _____, (DX) _____, (DY) _____, (DZ) _____, (EA) _____, (EB) _____, (EC) _____, (ED) _____, (EE) _____, (EF) _____, (EG) _____, (EH) _____, (EI) _____, (EJ) _____, (EK) _____, (EL) _____, (EM) _____, (EN) _____, (EO) _____, (EP) _____, (EQ) _____, (ER) _____, (ES) _____, (ET) _____, (EU) _____, (EV) _____, (EW) _____, (EX) _____, (EY) _____, (EZ) _____, (FA) _____, (FB) _____, (FC) _____, (FD) _____, (FE) _____, (FF) _____, (FG) _____, (FH) _____, (FI) _____, (FJ) _____, (FK) _____, (FL) _____, (FM) _____, (FN) _____, (FO) _____, (FP) _____, (FQ) _____, (FR) _____, (FS) _____, (FT) _____, (FU) _____, (FV) _____, (FW) _____, (FX) _____, (FY) _____, (FZ) _____, (GA) _____, (GB) _____, (GC) _____, (GD) _____, (GE) _____, (GF) _____, (GG) _____, (GH) _____, (GI) _____, (GJ) _____, (GK) _____, (GL) _____, (GM) _____, (GN) _____, (GO) _____, (GP) _____, (GQ) _____, (GR) _____, (GS) _____, (GT) _____, (GU) _____, (GV) _____, (GW) _____, (GX) _____, (GY) _____, (GZ) _____, (HA) _____, (HB) _____, (HC) _____, (HD) _____, (HE) _____, (HF) _____, (HG) _____, (HH) _____, (HI) _____, (HJ) _____, (HK) _____, (HL) _____, (HM) _____, (HN) _____, (HO) _____, (HP) _____, (HQ) _____, (HR) _____, (HS) _____, (HT) _____, (HU) _____, (HV) _____, (HW) _____, (HX) _____, (HY) _____, (HZ) _____, (IA) _____, (IB) _____, (IC) _____, (ID) _____, (IE) _____, (IF) _____, (IG) _____, (IH) _____, (IJ) _____, (IK) _____, (IL) _____, (IM) _____, (IN) _____, (IO) _____, (IP) _____, (IQ) _____, (IR) _____, (IS) _____, (IT) _____, (IU) _____, (IV) _____, (IW) _____, (IX) _____, (IY) _____, (IZ) _____, (JA) _____, (JB) _____, (JC) _____, (JD) _____, (JE) _____, (JF) _____, (JG) _____, (JH) _____, (JI) _____, (JJ) _____, (JK) _____, (JL) _____, (JM) _____, (JN) _____, (JO) _____, (JP) _____, (JQ) _____, (JR) _____, (JS) _____, (JT) _____, (JU) _____, (JV) _____, (JW) _____, (JX) _____, (JY) _____, (JZ) _____, (KA) _____, (KB) _____, (KC) _____, (KD) _____, (KE) _____, (KF) _____, (KG) _____, (KH) _____, (KI) _____, (KJ) _____, (KL) _____, (KM) _____, (KN) _____, (KO) _____, (KP) _____, (KQ) _____, (KR) _____, (KS) _____, (KT) _____, (KU) _____, (KV) _____, (KW) _____, (KX) _____, (KY) _____, (KZ) _____, (LA) _____, (LB) _____, (LC) _____, (LD) _____, (LE) _____, (LF) _____, (LG) _____, (LH) _____, (LI) _____, (LJ) _____, (LK) _____, (LL) _____, (LM) _____, (LN) _____, (LO) _____, (LP) _____, (LQ) _____, (LR) _____, (LS) _____, (LT) _____, (LU) _____, (LV) _____, (LW) _____, (LX) _____, (LY) _____, (LZ) _____, (MA) _____, (MB) _____, (MC) _____, (MD) _____, (ME) _____, (MF) _____, (MG) _____, (MH) _____, (MI) _____, (MJ) _____, (MK) _____, (ML) _____, (MN) _____, (MO) _____, (MP) _____, (MQ) _____, (MR) _____, (MS) _____, (MT) _____, (MU) _____, (MV) _____, (MW) _____, (MX) _____, (MY) _____, (MZ) _____, (NA) _____, (NB) _____, (NC) _____, (ND) _____, (NE) _____, (NF) _____, (NG) _____, (NH) _____, (NI) _____, (NJ) _____, (NK) _____, (NL) _____, (NM) _____, (NO) _____, (NP) _____, (NQ) _____, (NR) _____, (NS) _____, (NT) _____, (NU) _____, (NV) _____, (NW) _____, (NX) _____, (NY) _____, (NZ) _____, (OA) _____, (OB) _____, (OC) _____, (OD) _____, (OE) _____, (OF) _____, (OG) _____, (OH) _____, (OI) _____, (OJ) _____, (OK) _____, (OL) _____, (OM) _____, (ON) _____, (OO) _____, (OP) _____, (OQ) _____, (OR) _____, (OS) _____, (OT) _____, (OU) _____, (OV) _____, (OW) _____, (OX) _____, (OY) _____, (OZ) _____, (PA) _____, (PB) _____, (PC) _____, (PD) _____, (PE) _____, (PF) _____, (PG) _____, (PH) _____, (PI) _____, (PJ) _____, (PK) _____, (PL) _____, (PM) _____, (PN) _____, (PO) _____, (PP) _____, (PQ) _____, (PR) _____, (PS) _____, (PT) _____, (PU) _____, (PV) _____, (PW) _____, (PX) _____, (PY) _____, (PZ) _____, (QA) _____, (QB) _____, (QC) _____, (QD) _____, (QE) _____, (QF) _____, (QG) _____, (QH) _____, (QI) _____, (QJ) _____, (QK) _____, (QL) _____, (QM) _____, (QN) _____, (QO) _____, (QP) _____, (QQ) _____, (QR) _____, (QS) _____, (QT) _____, (QU) _____, (QV) _____, (QW) _____, (QX) _____, (QY) _____, (QZ) _____, (RA) _____, (RB) _____, (RC) _____, (RD) _____, (RE) _____, (RF) _____, (RG) _____, (RH) _____, (RI) _____, (RJ) _____, (RK) _____, (RL) _____, (RM) _____, (RN) _____, (RO) _____, (RP) _____, (RQ) _____, (RR) _____, (RS) _____, (RT) _____, (RU) _____, (RV) _____, (RW) _____, (RX) _____, (RY) _____, (RZ) _____, (SA) _____, (SB) _____, (SC) _____, (SD) _____, (SE) _____, (SF) _____, (SG) _____, (SH) _____, (SI) _____, (SJ) _____, (SK) _____, (SL) _____, (SM) _____, (SN) _____, (SO) _____, (SP) _____, (SQ) _____, (SR) _____, (SS) _____, (ST) _____, (SU) _____, (SV) _____, (SW) _____, (SX) _____, (SY) _____, (SZ) _____, (TA) _____, (TB) _____, (TC) _____, (TD) _____, (TE) _____, (TF) _____, (TG) _____, (TH) _____, (TI) _____, (TJ) _____, (TK) _____, (TL) _____, (TM) _____, (TN) _____, (TO) _____, (TP) _____, (TQ) _____, (TR) _____, (TS) _____, (TU) _____, (TV) _____, (TW) _____, (TX) _____, (TY) _____, (TZ) _____, (UA) _____, (UB) _____, (UC) _____, (UD) _____, (UE) _____, (UF) _____, (UG) _____, (UH) _____, (UI) _____, (UJ) _____, (UK) _____, (UL) _____, (UM) _____, (UN) _____, (UO) _____, (UP) _____, (UQ) _____, (UR) _____, (US) _____, (UT) _____, (UU) _____, (UV) _____, (UW) _____, (UX) _____, (UY) _____, (UZ) _____, (VA) _____, (VB) _____, (VC) _____, (VD) _____, (VE) _____, (VF) _____, (VG) _____, (VH) _____, (VI) _____, (VJ) _____, (VK) _____, (VL) _____, (VM) _____, (VN) _____, (VO) _____, (VP) _____, (VQ) _____, (VR) _____, (VS) _____, (VT) _____, (VU) _____, (VV) _____, (VW) _____, (VX) _____, (VY) _____, (VZ) _____, (WA) _____, (WB) _____, (WC) _____, (WD) _____, (WE) _____, (WF) _____, (WG) _____, (WH) _____, (WI) _____, (WJ) _____, (WK) _____, (WL) _____, (WM) _____, (WN) _____, (WO) _____, (WP) _____, (WQ) _____, (WR) _____, (WS) _____, (WT) _____, (WU) _____, (WV) _____, (WW) _____, (WX) _____, (WY) _____, (WZ) _____, (XA) _____, (XB) _____, (XC) _____, (XD) _____, (XE) _____, (XF) _____, (XG) _____, (XH) _____, (XI) _____, (XJ) _____, (XK) _____, (XL) _____, (XM) _____, (XN) _____, (XO) _____, (XP) _____, (XQ) _____, (XR) _____, (XS) _____, (XT) _____, (XU) _____, (XV) _____, (XW) _____, (XX) _____, (XY) _____, (XZ) _____, (YA) _____, (YB) _____, (YC) _____, (YD) _____, (YE) _____, (YF) _____, (YG) _____, (YH) _____, (YI) _____, (YJ) _____, (YK) _____, (YL) _____, (YM) _____, (YN) _____, (YO) _____, (YP) _____, (YQ) _____, (YR) _____, (YS) _____, (YT) _____, (YU) _____, (YV) _____, (YW) _____, (YX) _____, (YZ) _____, (ZA) _____, (ZB) _____, (ZC) _____, (ZD) _____, (ZE) _____, (ZF) _____, (ZG) _____, (ZH) _____, (ZI) _____, (ZJ) _____, (ZK) _____, (ZL) _____, (ZM) _____, (ZN) _____, (ZO) _____, (ZP) _____, (ZQ) _____, (ZR) _____, (ZS) _____, (ZT) _____, (ZU) _____, (ZV) _____, (ZW) _____, (ZX) _____, (ZY) _____, (ZZ) _____.

13 Pharmaceutical 1

A a pharmaceutical is a drug, or other substance, for use in diagnosis, prevention, treatment, or cure of disease, or to restore or improve physical structure, or to improve or alter appearance

The pharmaceutical industry produces medicinal drugs used for the same purposes

The different areas of research in the pharmaceutical industry are: **pre-clinical research** (toxicology, pharmacology, pharmacokinetics, etc.)

- **pre-clinical research** (toxicology, pharmacology, pharmacokinetics, etc.)
- **clinical research** (toxicology, pharmacology, pharmacokinetics, etc.)
- **pharmaceutical research**
- **clinical research** (toxicology, pharmacology, pharmacokinetics, etc.)

B a pharmaceutical is a drug, or other substance, for use in diagnosis, prevention, treatment, or cure of disease, or to restore or improve physical structure, or to improve or alter appearance

Pharmaceutical process

research & development → pre-clinical → clinical → regulatory → manufacturing → distribution → sales & marketing

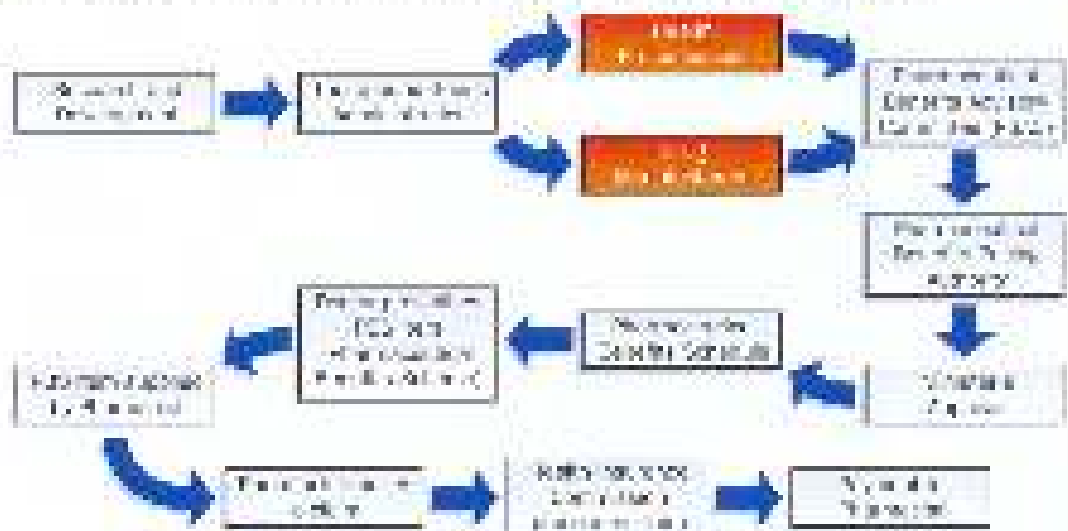
Regulatory process

approval → pre-clinical → research & development → clinical → regulatory → manufacturing → distribution → sales & marketing

Pharmaceutical research

target → drug design → pre-clinical → clinical → regulatory → manufacturing → distribution → sales & marketing

C This flowchart shows the relationship of a pharmaceutical research & development



TABLES

- 1** Complete the sentences using a word or the form of the word in brackets, and use each word once.
1. Measuring the growth of corn and other crops is often done by the **harvest** (harvest).
 2. Clinical studies of the **efficacy** of a drug (efficacy) often require that the drug be used in a **double-blind** (double-blind) process.
 3. A **double-blind** design of the **study** (study) is the most reliable.
 4. The **effectiveness** of a particular drug (effectiveness) is often tested by means of a **double-blind** (double-blind) study.
 5. The **effectiveness** of a drug in producing a desired effect is often tested by a **double-blind** (double-blind) study.
 6. The **effectiveness** of a drug is often tested by a **double-blind** (double-blind) study.
 7. A **double-blind** design is often used in the **study** (study) of a medical treatment.
 8. The **effectiveness** of a drug is often tested by a **double-blind** (double-blind) study.

- 2** Write an appropriate word or the preferred plural form of each word in its appropriate sense or phrase (be sure to write the full form).
1. **Effectiveness** (effectiveness) is the degree to which a drug or treatment is effective.
 2. **Effectiveness** (effectiveness) is the degree to which a drug or treatment is effective.
 3. Our bodies and the bodies of animals obtain oxygen through **respiration** (respiration).
 4. The **effectiveness** (effectiveness) of a drug is often tested by means of a **double-blind** (double-blind) study.
 5. The **effectiveness** (effectiveness) of a drug is often tested by means of a **double-blind** (double-blind) study.
 6. **Effectiveness** (effectiveness) is the degree to which a drug or treatment is effective.
 7. The **effectiveness** (effectiveness) of a drug is often tested by means of a **double-blind** (double-blind) study.
 8. The **effectiveness** (effectiveness) of a drug is often tested by means of a **double-blind** (double-blind) study.
 9. **Effectiveness** (effectiveness) is the degree to which a drug or treatment is effective.

3 Match the beginning of each sentence with an industry, fill in the blank, and work from the box.

received + people + airport + selling + quality + success + quality
 safety + economic + treatment + health + healthy + disease

1. The **effectiveness** (effectiveness) of a drug is often tested by means of a **double-blind** (double-blind) study.

2. The **effectiveness** (effectiveness) of a drug is often tested by means of a **double-blind** (double-blind) study.

3. The **effectiveness** (effectiveness) of a drug is often tested by means of a **double-blind** (double-blind) study.

4. The **effectiveness** (effectiveness) of a drug is often tested by means of a **double-blind** (double-blind) study.

5. The **effectiveness** (effectiveness) of a drug is often tested by means of a **double-blind** (double-blind) study.

6. The **effectiveness** (effectiveness) of a drug is often tested by means of a **double-blind** (double-blind) study.

7. The **effectiveness** (effectiveness) of a drug is often tested by means of a **double-blind** (double-blind) study.

8. The **effectiveness** (effectiveness) of a drug is often tested by means of a **double-blind** (double-blind) study.

9. The **effectiveness** (effectiveness) of a drug is often tested by means of a **double-blind** (double-blind) study.

10. The **effectiveness** (effectiveness) of a drug is often tested by means of a **double-blind** (double-blind) study.

11. The **effectiveness** (effectiveness) of a drug is often tested by means of a **double-blind** (double-blind) study.

12. The **effectiveness** (effectiveness) of a drug is often tested by means of a **double-blind** (double-blind) study.

14 Pharmaceutical 2

A A **pharmacokinetic** measurement of the overall rate of elimination of the drug during a 24-hour period. Some diseases or conditions cause some symptoms to last for a long time (e.g. pneumonia) while others (e.g. asthma) can be controlled by a regular and effective regimen of self-administered treatment (e.g. inhalers).

Classification: *pharmacokinetics*

- **bioavailability** (pharmacokinetics) (the amount of drug that enters the body, reduced by absorption and excretion)
- **clearance** (pharmacokinetics) (the rate drug is eliminated)
- **half-life** (pharmacokinetics) (the time it takes for the concentration of drug to halve)
- **pharmacokinetics** (the study of how drugs are absorbed, distributed, metabolised and excreted)

B There are many **antimicrobials** available to be used with **antibiotics**. **Antibiotics** are defined as drugs used to treat drug-resistant infections. **Antimicrobials** are a broader class of drugs. They include the following:

Classification:

antibiotics = *antibiotic* + *pharmaceutical* = *antibiotic* + *pharmaceutical* = *antibiotic* + *pharmaceutical* = *antibiotic* + *pharmaceutical* = *antibiotic* + *pharmaceutical*
antimicrobials = *antimicrobial* + *pharmaceutical* = *antimicrobial* + *pharmaceutical* = *antimicrobial* + *pharmaceutical*

Antimicrobials and vaccines:

antimicrobials = *antimicrobial* + *pharmaceutical* = *antimicrobial* + *pharmaceutical* = *antimicrobial* + *pharmaceutical*
antibiotics = *antibiotic* + *pharmaceutical* = *antibiotic* + *pharmaceutical* = *antibiotic* + *pharmaceutical*
antimicrobials = *antimicrobial* + *pharmaceutical* = *antimicrobial* + *pharmaceutical* = *antimicrobial* + *pharmaceutical*

Drug names:

antimicrobials = *antimicrobial* + *pharmaceutical* = *antimicrobial* + *pharmaceutical* = *antimicrobial* + *pharmaceutical*
antibiotics = *antibiotic* + *pharmaceutical* = *antibiotic* + *pharmaceutical* = *antibiotic* + *pharmaceutical*

C The **biopharmaceutical** and **pharmaceutical** industries produce **biopharmaceuticals** and **pharmaceuticals**. **Biopharmaceuticals** are drugs that are derived from living organisms or their products.

Form	Meaning	Origin
antibiotic	antibiotic	Greek
antimicrobial	antimicrobial	Greek
antifungal	antifungal	Greek
antiparasitic	antiparasitic	Greek
antiviral	antiviral	Greek
antibacterial	antibacterial	Greek
antibiotic	antibiotic	Greek
antimicrobial	antimicrobial	Greek
antifungal	antifungal	Greek
antiparasitic	antiparasitic	Greek
antiviral	antiviral	Greek
antibacterial	antibacterial	Greek
antibiotic	antibiotic	Greek
antimicrobial	antimicrobial	Greek
antifungal	antifungal	Greek
antiparasitic	antiparasitic	Greek
antiviral	antiviral	Greek

16 Electrical

A Theoretical or practical work with the practical application of the theory of electricity is the construction and manufacture of various devices and devices that do not have a name and variety.

Electrical engineering is a branch of technology that deals with electricity.

- | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|
| • electrical engineering | • electrical engineering | • electrical engineering | • electrical engineering |
|--------------------------|--------------------------|--------------------------|--------------------------|

The main applications of electrical engineering are:

- | | | |
|----------------------------|---------------------------|---------------------|
| • electrical power systems | • communication systems | • power systems |
| • electronic devices | • solid-state electronics | • radio |
| • control systems | • medical imaging systems | • power electronics |
| • computer design | • robotics | • teleoptics |

In recent years, the electrical engineering has changed as the largest application of electrical engineering. However, another one is the field of electrical and electronic lighting, power and heat applications. The electrical engineering has also included the design of electrical systems and systems, power systems, and electrical systems, including lighting systems, and applications.

B There is a problem, but it is solved by doing things. The right power can be used to solve a problem or do it for you.

The level of power:

$$P(\text{watts}) = \frac{V(\text{volts}) \times I(\text{amps})}{1000} = \frac{V \times I}{1000}$$

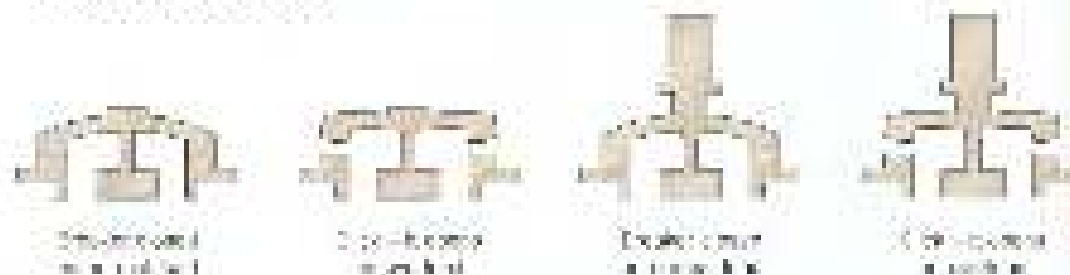
The level of power:

$$P(\text{watts}) = \frac{V(\text{volts}) \times I(\text{amps})}{1000} = \frac{V \times I}{1000} = \frac{V \times I}{1000}$$

The level of power:

$$P(\text{watts}) = \frac{V(\text{volts}) \times I(\text{amps})}{1000} = \frac{V \times I}{1000} = \frac{V \times I}{1000}$$

The level of power:



C The power can be used to solve a problem or do it for you. The right power can be used to solve a problem or do it for you.

- electrical engineering
- electrical engineering
- electrical engineering
- electrical engineering

TABLE

1. Match the terms in bold in the following sentences.

1. The **main components** are the **key components** in design.
2. The **main** part of the software is **the core** and includes the **operating system**.
3. The **main** part of the hardware is **the system** and the **input and output** units.
4. The **main** part of the software is **the core** and the **input and output** units are **the peripheral** parts.
5. The **main** part of the software is **the core** and the **input and output** units are **the peripheral** parts.
6. The **main** part of the hardware is **the system** and the **input and output** units are **the peripheral** parts.
7. The **main** part of the software is **the core** and the **input and output** units are **the peripheral** parts.
8. The **main** part of the hardware is **the system** and the **input and output** units are **the peripheral** parts.

2. For the words in bold, choose the word which fits in the sentence.

1. The **main** part of the system is **the core** and the **input and output** units are **the peripheral** parts.
2. Computer graphics are an example of **the core** and the **input and output** units are **the peripheral** parts.
3. The **main** part of the hardware is **the system** and the **input and output** units are **the peripheral** parts.
4. The **main** part of the software is **the core** and the **input and output** units are **the peripheral** parts.
5. The **main** part of the hardware is **the system** and the **input and output** units are **the peripheral** parts.
6. The **main** part of the software is **the core** and the **input and output** units are **the peripheral** parts.
7. The **main** part of the hardware is **the system** and the **input and output** units are **the peripheral** parts.
8. The **main** part of the software is **the core** and the **input and output** units are **the peripheral** parts.
9. The **main** part of the hardware is **the system** and the **input and output** units are **the peripheral** parts.
10. The **main** part of the software is **the core** and the **input and output** units are **the peripheral** parts.

3. Complete the sentences by choosing the correct word.

input, output, core, system, peripheral, hardware, software, operating system, user interface, network, data, storage, security, backup, recovery, disaster recovery, backup, recovery, disaster recovery

The **main** part of the software is **the core** and the **input and output** units are **the peripheral** parts. The **main** part of the hardware is **the system** and the **input and output** units are **the peripheral** parts. The **main** part of the software is **the core** and the **input and output** units are **the peripheral** parts. The **main** part of the hardware is **the system** and the **input and output** units are **the peripheral** parts. The **main** part of the software is **the core** and the **input and output** units are **the peripheral** parts. The **main** part of the hardware is **the system** and the **input and output** units are **the peripheral** parts.

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18 Electronics 2

A The field of electronics covers a wide range of electronic devices and systems, with a focus on computers and computers, such as microprocessors, microchips, and integrated circuits. It has evolved from a niche hobby to a major industry. The history and evolution of electronics have transformed our lives in many ways, and many new technologies have emerged in a relatively short time. Specific examples include:

- the development of space technology and satellite communication
- the evolution of the internet, mobile phones, and social media
- the development of computer-aided manufacturing
- systems for sorting and handling waste and recycling
- radio systems in navigation, sports, and other fields
- development of artificial intelligence, robotics, and autonomous vehicles

B Through research, development, and manufacturing, the industry has made significant contributions to various fields of science and technology.

Applications of electronics include:

medicine + aerospace + consumer goods + sports
 defense + energy/power + environmental + imaging systems
 industrial automation + medical instrumentation + robotics + telecommunications
 (auto + TV) + consumer electronics + information systems + data storage

Tasks in electronic engineering

design + analysis + diagnosis + trouble-shooting
 installation + repair + test

C As a result of research and development, the industry has made significant contributions to various fields of science and technology. This has led to many new technologies and products that have improved our lives in many ways.

Scope and responsibilities

Senior Electronics Design Engineer

The Senior Electronics Design Engineer

Responsible for supervising the research and development of new electronic products, including business development.

- electronic product development from design to production
- electronic design, analysis and testing of new products from product specification, including a minimum of the design and preparation of a feasibility design for production
- review and design of electronic products
- electronic circuit design and board layout for new and existing products
- test and production support for new products

- working closely with marketing to create and develop products according to customer needs
- managing and controlling engineering support product development
- developing and managing specific technical areas and projects to meet the design and production requirements
- working with various product groups to coordinate design projects during the design process
- providing technical support for the design and production of new products
- managing the design and production of new products
- managing the design and production of new products
- managing the design and production of new products
- managing the design and production of new products

19 Energy

- A** The UK energy system has changed dramatically over the last century:
- in the first half of the twentieth century
 - coal was the dominant fuel to industry, with steam power plants and in homes and houses
 - transportation shifted to larger vessels with large diesel engines and oil
 - In the second half of the 20th century:
 - coal was used to be a central importance for electricity generation, although its importance declined in the 1970s
 - nuclear power plants began to be commissioned from the mid-1970s
 - the electricity industry was nationalized into state-owned monopolies, during the 1950s
 - the high voltage electricity transmission network was created to take a long span electricity over long distances from big power plants
 - electricity distribution networks developed in importance and density
 - during the 1960s and 1970s there was a rise in an efficient natural gas network for heating, industry, consumer and domestic
 - development of gas turbines increased dramatically
 - gas-fired central heating widely replaced traditional fire in homes
 - the use of electrical appliances increased the demand for the domestic sector to meet large

- B** Today we are using increasingly diverse renewable sources of energy which contribute to clean and clean energy systems, using an increasingly flexible and integrated systems.

Source of energy

Renewable	Non-renewable
sun + water	coal, shale, oil, natural gas, petroleum
wind + wind	nuclear + petroleum + uranium

Types of energy

Fossil fuel energy = coal + oil + natural gas + gas power + geothermal energy
 Greenhouse effect = hydroelectric power + hydrothermal energy + solar energy
 Nuclear energy = nuclear energy + solar energy + solar power + wind power
 Wind power + solar power = 5,720 TWh

Equipment to produce energy

Coal energy plant + gas turbine + gas power + geothermal power + geothermal
 Hydroelectricity + hydrothermal power + water + nuclear power + power plant
 geothermal + solar power + solar power + fuel energy + fuel oil + oil
 Atomic + solar power + wind power + wind

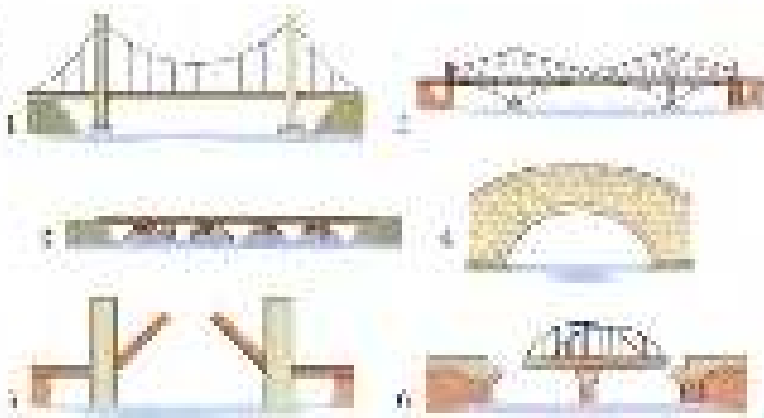
- C** Make the connection below:
- In 1991, the energy system lowest efficiency and least cost in the world with coal being dominant remained as the UK's lowest source of energy.
- Development in technology was gradually

lowering the cost of generating electricity from a variety of renewable sources.
 The increasing and fluctuating price of natural gas are contributing to making business and residential consumers

TASKS

- 1 Name the bridges opposite. Choose from the following.

truss
cantilever
swing
suspension
cable
arch



- 2 What is being described? Choose from the words on the opposite page.

- This structure is built across a river to hold back the water to produce power, or even to regulate a river's flooding.
- This structure is built along the banks of a river making the coast to hold back water and prevent flooding.
- This is a natural or artificial flow of water.
- This is a structure across a road or canal which is built with concrete or brick.
- The section of a road where the surface level changes to raise level from one level to the next.
- This is a low wall to flow water from a high to a lower level, usually to drain the water level in a river.
- A deep hollow in the ground where people or get water.
- This is a long and narrow land made of mud and silt.
- This is the process of removing salt from seawater.
- This is a powerful water flow that breaks through a land divide.
- This structure is built to stop waves from coming land and hold back the water of a river or a harbor.
- This structure is used for holding, storing, or supplying water to a road surface.

- 3 A civil engineer is showing an international visitor around Bangkok. He lists with words from Book 1 from the opposite page.

There are five or six or more lanes across the river and the road is not flat. It has a big _____.

The ground is made of mud to hold up the houses and this is done in the city.

The highest part of the road is like the _____ in the water.

It is _____ with big water pipes below the surface of the road.

At certain points along the road, there are large pipes of _____.

Some of these are concrete and take form water which also can flow the road.

On either side of the road there is a road _____.

It is _____ for pedestrians which is

edged with _____.

The black surface on the kerbside is a variety of _____.

It was covered by a rain of hot water. When it cooled, the water solid.

There are a number of _____.

_____ following the lane lines or for directions.

There are _____ roads on the road.

There are a few cars like _____.

Some are allowed to pass along the lanes and _____.

Over the road, there are _____.

21 Civil engineering 2

A The functions of civil engineers all involve cooperation:

1. before construction (feasibility studies, site investigations, and design)
2. during construction (working with clients, controlling processes, and supervising)
3. after construction (maintenance)

As a responsible professional you will work with a feasibility study team, which both finds a real need for the project and if the feasibility study is positive, the investigation, design and construction phases have been approved in more detail. It is often a legally necessary to evaluate the load-bearing qualities and stability of the ground. This field is called soil mechanics. The design of engineering structures involves the application of principles of mechanics. From education to practice always. During the construction phase, a responsible engineer must also be able to take responsibility for design of the work in supplying specifications, drawings, and legal documents to get something under ground. It is a task that is perhaps essential for the building contractor (understand its function, range, scope, contract, and control) in the whole project. Maintenance is usually carried out by the contractor on site of the operations. If there are unexpected problems with the responsibility of the contractor, it may be necessary to refer

B You will be familiar with the terms used in the next construction phase:

Preliminary feasibility study

A study to identify whether the objectives of a proposed construction project are feasible and to be carried out.

Site studies (feasibility study)

A process to determine the cost of the project, the remaining activities. Rough drawings are produced at this stage. In order that more accurate costing systems can be implemented.

Feasibility study factors

cost = (worth of gain) + maintenance + technology + disruption

Preliminary design

Determine and specify the structure to be built, including a detailed plan of the structure and construction methods.

Detailed design

A detailed plan of the design of a structure, including a detailed plan of the structure. It is used to determine the feasibility and the physical form.

After the detailed design is complete, a detailed plan of the structure is produced. This is the final design calculation to a detailed design which can be built from the detailed plan. After the detailed design is complete, a detailed plan of the structure is produced.

C Read the list of the essential stages of responsibility in a civil engineering job:

- to give the client of the building research and analysis
- to provide a plan for the experienced staff
- to provide a detailed study, including a detailed and preliminary, and the quality of the work
- to provide the design and planning activities including the design of the final work plan and design
- to provide a list of the essential stages of responsibility in a civil engineering job

TASKS

1 Match the following words and phrases with their definitions.

test the water	building or installation which is built, supplied, or installed complete and ready to operate
site investigation	work has started but after the ground has been drilled and tested
on drawings	with a plan or prepared structure
test material on specifications	conducting and testing materials
test road strength	extensive investigation to evaluate the geotechnical qualities and stability of the ground
contract as a project	investigation to assess both technical and progress of success of a project
contract review	offer of a contract as an engineering contract
watch	process which involves the issue of a permit by the management to a contractor to do a specific part
finalize project	study of the proposed location to assess geology of the area to give a plan to be carried out

2 For the following, select the appropriate phase of construction:

conducting geotechnical investigations with a client + offer of a contract + test materials + contract review + contract as a project + site investigation + preliminary site investigation

Phase	tasks
Before construction	
During construction	
After construction	

3 The following extract is from a letter written by a qualified civil engineer in response to a job advertisement. Fill in the extract by using suitable adjectives or headlines.

There is a gap in the extract with the job advertisement for a civil (a) _____ (engineer), which appeared in your Civil Engineering

I have a degree in (a) _____ (a) civil (a) engineering. After graduation, I worked for five years as

Lead Engineer in the field of (a) _____ (a) civil (a) engineering. During my time there, I

specialized in (a) _____ (a) civil (a) engineering and (a) civil (a) engineering. I am

well-versed in (a) _____ (a) civil (a) engineering, especially in (a) civil (a) engineering

• development of (a) _____ (a) civil (a) engineering

• (a) _____ (a) civil (a) engineering

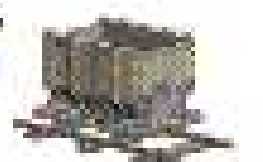
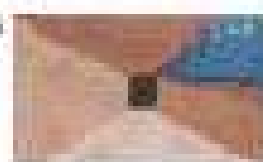
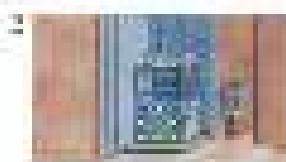
• (a) _____ (a) civil (a) engineering

TASKS

1 Match the following words and phrases with their definitions.

blasted	1. A large quantity of a soft, malleable substance, suitable for application.
excavate	2. A large, heavy structure from the earth for functional purposes, such as a wall or structure.
excavator	3. An open or surface mining activity, usually for the extraction of building materials, such as stone and limestone.
excavation	4. A hole or trench, such as a trench or shaft.
excavated	5. A hole, such as a trench or shaft.
mining	6. To extract and/or rock materials from a location and transport them to another.
mine	7. Search for coal, iron ore, or gold.
mined	8. To naturally occurring material from which a mineral or substance of economic value can be extracted.
quarry	9. An open-pit, underground, and surface of mineral deposits and ore of a mine.

2 Label the following types of mining equipment with words from Task 1.



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3 Reorganize the letters to complete the short descriptions of the activities of different mining professionals.

1 I work in an open-pit mine. I use a large excavator to dig out the mineral ore. I am usually called as _____ in mining.

2 I work in a quarry. I use a large excavator to dig out the mineral ore. I am usually called as _____ in mining.

3 I work in a mine. I use a large excavator to dig out the mineral ore. I am usually called as _____ in mining.

4 I work in a mine. I use a large excavator to dig out the mineral ore. I am usually called as _____ in mining.

5 I work in a mine. I use a large excavator to dig out the mineral ore. I am usually called as _____ in mining.

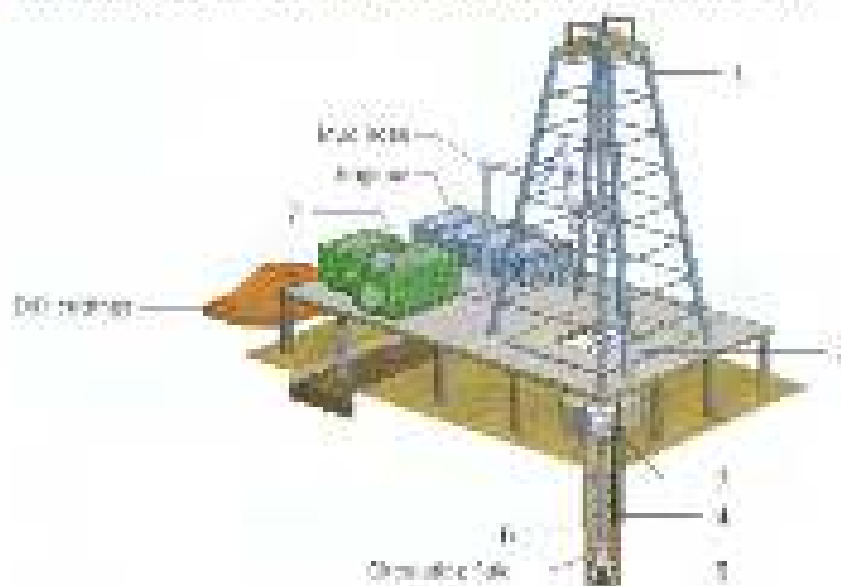
6 I work in a mine. I use a large excavator to dig out the mineral ore. I am usually called as _____ in mining.

TASKS

1 Match the following words and phrases with their definitions.

jackpot	a hole drilled into the earth to recover oil or gas
drill	a part of a steel structure used to drill a hole in a rock or other solid
skid	a structure that supports all the necessary equipment for drilling
lay cable	an offshore structure from which wells are drilled
offshore	under water
oil rig	excavation and production activities for oil and natural gas
reservoir	places in oceans, seas or large lakes
rig	machinery that carries out a task with energy
undersea	under the ground
well	to take out a solid or liquid

2 The following diagram shows the main parts of an oil rig. Label the parts.



3 The following are descriptions of eight basic steps of oil-drilling. Write down where the operations compare links and is located. The steps are mixed up and some of the letters of the missing words are also mixed up. Number the steps in the correct order and then rearrange the jumbled words.

- ___ Add new sections (parts) of metal _____ to pipe as the hole goes deeper.
- After the bit _____ (excavation) is formed.
- As drilling progresses, a column of heavy oil _____ is added through the pipe and into the hole to help to cut the rock and _____ (partitions) of the hole.
- At a certain point _____ (drill) and rig _____ (drill) are separated.
- Place the _____ (weight) on the end of the hole to _____ (pressure) the well.
- Place the bit, bit, bit _____ (drill) and bit _____ (drill).
- At _____ (pressure) run down the hole to _____ (drill).
- At _____ (pressure) run down the hole to _____ (drill) when the desired depth is reached.

24 Petroleum 2

A Petroleum is a natural or refined material, or separated by distillation, from petroleum, which is a liquid hydrocarbon mixture that flows from the soil, the earth, or usually transported to refinery by pipelines or tankers ships. These hydrocarbon mixtures are processed and each often by further refining processes, a process called fractional distillation, to produce a desired product from a mixture. The separation of the different components, according to collection of different hydrocarbons in the tower. The hydrocarbons are separated from the collection and further processing to produce a specific product, for example asphalt or asphalt coating, gas, gasoline, fuel, propane, and natural gas, to break up each of the hydrocarbons into several molecules of low hydrocarbons. Some of the hydrocarbons are refined normally as lubricating oil or petroleum.

Today the work is done by a system of pipelines or pipes, pipelines, rail, bus, ships, and more pipelines. The transportation of petroleum products, such as natural gas, petroleum, or petroleum, from the source to consumers, is done by a system of pipelines, bus, tankers, and other means of transportation.

B Also, a few hydrocarbons are separated by the refinery, depending on the structure, and petroleum, is separated into petroleum.

Refinery

refinery (noun) = distillation + refinery + refinery
 refinery (noun) = refinery + refinery + refinery

Transporting

transport (verb) = transport + transport + transport

Fractional distillation

fractionation + distillation + distillation process
 fractionation = distillation + distillation + distillation

Petroleum products from petroleum (p. 12)

refining, asphalt, + asphalt, + asphalt, + asphalt, + asphalt
 petroleum (noun) = petroleum + petroleum + asphalt and other products + asphalt

C Reading of reviewing your vocabulary list to learn the associated words from a key word. Fill in the word table below, which shows words related to the key words presented below.

Noun	Verb	Adjective
refinery	refine	refined (oil)
refraction	refract	refractive
distillation	distill	distilled (oil)
fuel	fuel	fuel
transport	transport	transport
fractional distillation	fractionate	fractionated (oil)
asphalt	asphalt	asphalt
refining process	refine	refining (oil)
oil	oil	oil
asphalt	asphalt	asphalt

25 Plastics

A Plastic is a synthetic material for polymers, materials made of long strings of carbon and other elements that react in a strong, stable compound, and is a chemical derived from oil, coal or other sources. (Oxide) -> monomers, units, atoms, polymer, repeating the molecules, length

The most common types of plastic are:

- Polyethylene (used in bottles)
- Polypropylene (used in crates)
- Polystyrene (used in packaging)

The two most main groups of plastic materials often with heat and further with cooling, while they are cooled = hard and by heat

The types of plastic cause major environmental problems. These include the most common in plastic waste:

- **crystalline** - being less likely to manufacture a product
- **amorphous** - more likely to be used in packaging
- **addition** - more plastic can be broken down into building blocks of monomers
- **condensation** - making the plastic from two molecules
- **addition** - making the plastic from one molecule

B It would be better without plastics, which helps to make them more possible in selection of plastic materials

carpets, coats, balloons, pens, buckets, electric cables, mobile phones, pipes, bottles, refrigerators, cars, boats, computers, windows, glasses

Features of plastic:

strong, cheap, easy to shape and colour, flexible, good insulator of heat, electricity, good and durable, lightweight, easy to use, various colours, tough, non-toxic

C Plastics are made from a specific raw material. The main types of the processes used:

Extrusion - in making a pipe, you pass it through a nozzle, make long lengths of each, slices, blow up

Blow moulding - used for making plastic bottles and things

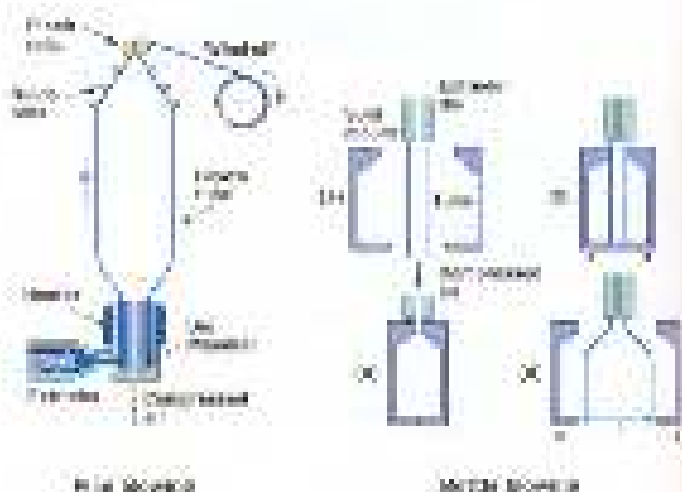
Injection moulding - lots of small parts, like car parts, which are made like this

Blow moulding - many bottles, which are made like this

Injection moulding - used to make car parts, like the seat, the car, the wheels

Extrusion - used to make long pipes and tubes, and other things

Extrusion - used to make long pipes and tubes, and other things



TASKS

1. For the following statements about plastics, tick or label if false, correct the statement.
 1. Polymers are made of long chains of carbon and other elements. ()
 2. All polymers are made into polymers by separating the carbon chains. ()
 3. Thermoplastics harden with heat and soften with cooling. ()
 4. All plastics can be recycled and made into new products. ()
 5. The most common thermoplastic used to deposit a surface is PVC. ()
 6. Thermosetting plastics will not melt. ()

2. Below is a table showing a list of items, articles and the type of plastic used. The middle column describes the plastic by its number. Tick the correct number from the list in the box.

1 = polythene, 2 = PVC, 3 = acrylic, 4 = PS
 5 = nylon, 6 = PET, 7 = polystyrene, 8 = melamine, 9 = injection moulding

Article	Item made	Plastic
bucket	1	PS (polystyrene)
stone table	1	PS (polystyrene)
car park sign	2	nylon
electric cable	2	PVC
rule	3	nylon
plastic bag	1	polythene
water pipe	4	PVC
milk bottle	6	polythene
acid container	1	PS (PS)

3. Below is the contents page from a teaching book on plastics. Circle the title of each chapter on the right, and a description of the contents of each chapter like the chapter title on the correct content.

1. Classification of plastics
2. Types of plastics
3. The applications
4. The needs
5. Extraction process
6. Plastic products
7. Different resins
8. Injection moulding process
9. Extrusion
10. Chemically synthesis of plastics

- a. quality control plastic design process
- b. injection moulding process
- c. extrusion process
- d. classification process
- e. extraction process
- f. different resins (PS, PE, PVC)
- g. requirements of plastics
- h. different types of plastics
- i. classification of plastics
- j. synthesis, needs, identification of plastic material

26 Agroindustry

A **agroindustry** is the industry that is concerned with the raising, processing, and marketing of livestock and related products and with related services throughout the parts of agriculture and related industry, including:

- food production and supply
- dairy farming and products
- animal feed
- animal feed that is not for consumption

Agroprocessing can be divided into:

- operations that are engaged in the initial processing of agricultural commodities such as sawmilling and flour-milling, to the tanning, oil-pressing, and fabric-making.
- food processing plants that are engaged in the manufacturing operations of a number of products such as sugar, animal products, dairy products, and food and feed, including coffee, spinning and weaving, paper products, and clothing and footwear manufacturing.

Agrotextiles covers the following:

- supply facilities for wool and fibers, possible in regional
- are involved in the marketing of farm products, such as commercial processors, woolwashers, lanolin pressers, and so forth.

Agrotextile engineering is the art, science, and industry of managing the growth of plants and animals for human use. It is a science that studies the new cultivation of the soil, growing and harvesting crops, breeding and raising livestock, dairies, and so forth.

B **agrotextile engineering** is the cultivation of crops, especially crops used in production systems, processing systems, and commercial and non-commercial livestock.

conversion + drainage + feeding + feeding + processing + feeding
 power + fuel + water + air + oxygen + power + fuel + oxygen
 + water + fuel + air + oxygen + power + fuel + oxygen
 + fuel + air + oxygen

Agrotextile engineering deals with the design, construction and design involved in the production, protection and use of animal and livestock.

access + control + equipment + fuel + air + oxygen
 fuel + air + oxygen + power + fuel + oxygen + fuel + air + oxygen

Agrotextile engineering is the art, science and industry of managing the growth of plants and animals for human use.

conversion + drainage + feeding + feeding + processing + feeding
 power + fuel + water + air + oxygen + power + fuel + oxygen
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C **Agrotextile engineering** is the art, science and industry of managing the growth of plants and animals for human use. It is a science that studies the new cultivation of the soil, growing and harvesting crops, breeding and raising livestock, dairies, and so forth.

- Introduction of food to diet
- Accessing goods
- Food processing
- Marketing, export and packaging
- Technology
- Control and distribution
- Production of food products
- Quality control



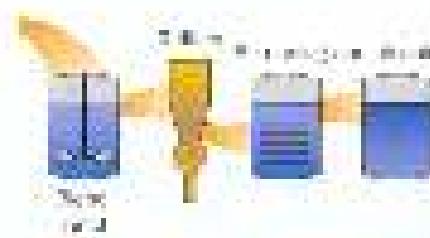
27 Pulp and paper

A

What are the main kinds of writing, printing, wrapping and packaging products? There are two main types of material commonly used for printed and wrapped products: the traditional products of paper and its associated pulp, and the modern synthetic polymers which include a mixture of natural and synthetic materials. A mixture of pulp and synthetic materials is commonly used for the factory production of the high quality writing papers and wrapping materials.

Wood chips are prepared by sawing the trunk of a tree by a saw which then the logs are chopped into thin rectangular pieces. There are two types of pulping: mechanical and chemical. In the mechanical process the wood fibres are broken up by means of a large grinder. In the chemical process the wood chips are ground mechanically to a refined state, the lignin is then chemically dissolved and a mixture of alkali from the chemical treatment of the wood pulp is used to break down the fibre structure. Various chemicals, additives such as dyes and bleaching are added. The mixture is pumped through a series of rollers and the final fibre structure is controlled.

Finally the pulp is mixed with water and laid. The final paper is produced by drying, it is covered in a protective film or wax and a range of finishes added.



B

What are the main types of writing, printing, wrapping and packaging products? There are two main types of material commonly used for printed and wrapped products:

Paper grades:

- white = card = art = book = business
- red = specialty = construction = writing

Paper properties:

- absorbent = lightweight = acidic = durability = green
- absorbent = weight = alkaline = strength = water resistant

Processes and qualities:

- white = quality = over = color

C

Paper factories use different types of paper:

- absorbent = weight = alkaline = durability = green
- absorbent = weight = alkaline = strength = water resistant
- absorbent = paper type = quality = durability = weight
- absorbent = weight = water proof = absorbent = water proof

TABLES

1 Study the following words with their definitions.

cell	divided into compartments
web	connected and into a fabric made by a mechanical or chemical process
cell	one unit in a part of a
cell	small container used
web	weaving into a fabric
cellulose	organic fibre consisting of fibres in a mass used in papermaking process
strand	small part of a log
roll	quantity of paper formed from a log, by a continuous
roll	to roll or to roll with rollers in a mill
roll	to turn around or to be turned

2 Organize the 5 stages of the papermaking process into 5 boxes in the flowchart.

bleeding the pulp

preparing the fibre

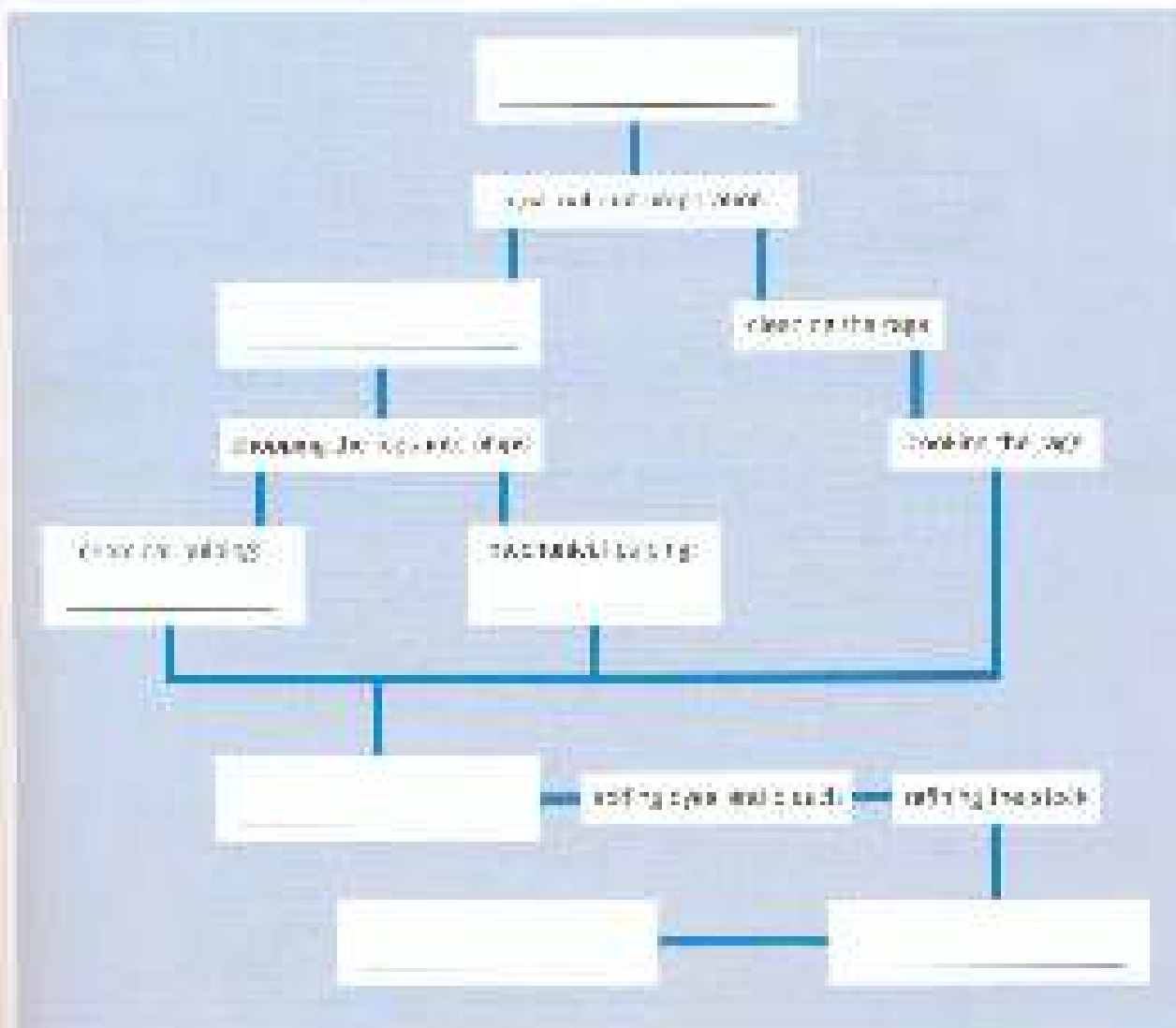
separating the fibres

making a suspension of fibres

forming and drying

forming the sheet

removing the water



TASKS

1 Match each of the following words with its definition.

ASIC	designed with a specific function, such as video files or MP3 files. An ASIC is a chip .
RAM	used to store data temporarily, so you can access it all the time.
antenna	used to transmit data to a computer, tablet or phone.
digital	using a binary code (0s and 1s) to represent everything.
gold-fake resolution	a thin piece of metal for connecting a computer screen.
frequency modulation	a wave suitable for modulation, eg. an information-bearing signal.
waterproof	an article of clothing, usually a raincoat, that is made from a material which is resistant to water.
performance	the rate at which a system, device, or standard of performance is able to operate for a given set of circumstances.
degradable	something that will naturally break down the complexity of the system.
RAM	random access memory.
waterproof	water-resistant and strong, like the cover of a computer case.

2 The following words are taken from four articles of technology news, radio and online. Link each term with the most appropriate task of the computer.

server + controller + capacity + LAN + job
 CD + optical drive + network + speaker + audio
 gigabyte + hard drive + RAM + MP3

A. A

B. B

C. C

3 The following article is taken from a description for a telecommunications technology course. Complete the list by choosing suitable words and phrases from the box.

starting with a **central** **unit** + **communications** **device** + **connecting** **signals** + **digital** **signals**

TELECOMMUNICATIONS TECHNOLOGY CURRICULUM COURSE

Course Stage	Course Details
Introduction to Telecommunications	What is the role of _____ of telecommunication?
Introduction to Telecommunications	What is the purpose of _____?
Analogue Communications	_____ (frequency) _____ signals.
Digital Communications	The message of _____ (digital) _____.
Introduction to Local Telecommunications	How is it used _____ (digital) _____?
Introduction to Long-Distance Telecommunications	_____ (digital) _____ (digital) _____.

30 Textiles

A Textile

- fibres that can be woven together to be suitable for use in a web, weaving, knitting, brooking or knitting
- all fibres both natural and synthetic, produced by any, partially or completely washing down from the natural materials may be
- obtained from natural sources, such as wool, flax, cotton
- produced from various synthetic chemical processes

After spinning and blending the fibres into yarns and filaments, processed materials are covered or coated with mill by the next stage, called finishing, to make the fabrics suitable for use in a wide range

- wool of fibres of fibre quality
- finishing
- natural or synthetic
- dyeing
- printing

The processing of fabrics may also be improved by applying finishing, pressing, ironing, and padding.

Also *weaving*, *knitting* and *knit* (verb), *knit* (verb).

- a manufacturer of textiles: *textile mill* or *textile factory*, *textile plant* and *textile mill*
- a machine used to knit or knit knits to make clothes or furniture, *knit*, *knit*, *knit*, *knit*, *knit*

B Weave

Wool

Wool is a natural fibre from sheep or goats, used in the production of textiles.

Techniques and processes

Knitting, weaving, spinning, dyeing, finishing, printing, ironing, padding, pressing, ironing, and padding.

Quality of Wool

Wool is classified according to its quality, which is determined by the number of fibres per unit area, the length of the fibres, the diameter of the fibres, the crimp of the fibres, the staple length, the yield of the wool, the yield of the wool, the yield of the wool, the yield of the wool.

C Textile processing

Knitting



Knitting is a textile process in which the yarns are interlaced to form a fabric. It is a process in which the yarns are interlaced to form a fabric. It is a process in which the yarns are interlaced to form a fabric.

Weaving



Weaving is a textile process in which the yarns are interlaced to form a fabric. It is a process in which the yarns are interlaced to form a fabric.

Knitting



Knitting is a textile process in which the yarns are interlaced to form a fabric. It is a process in which the yarns are interlaced to form a fabric.

Dyeing



Dyeing is a textile process in which the yarns are interlaced to form a fabric. It is a process in which the yarns are interlaced to form a fabric.

Finishing



Finishing is a textile process in which the yarns are interlaced to form a fabric. It is a process in which the yarns are interlaced to form a fabric.

TABLE 9

1 Find eight words with related prefixes from the word square (p. 10).

S	I	L	E	V	L	O	F	C	G	R	Z	F
P	E	S	P	L	O	H	X	D	S	T	E	I
A	E	K	E	L	O	E	A	Y	D	O	E	A
S	E	E	E	V	Y	H	H	E	I			E
A	E	E	E			A	S	E	E			M
O	H	I	E	G	H	R	H	R	E	A	I	
F	E	E	E	W	T	H	A	V	I	L	T	M
T	A	J	K	L	E	R	G	X	O	C	M	E
A	E	E	E	H	H	L	M	I				E
A	E	E	E	H	H	R	E	W	E	E		E
P	E	E	E	Y	H	P	E	E	E	E		H
S	E	E	E	A	S	E	E	H	O	L	M	
S	E			H	A	E	E	E	E	E		E
L	E	E	E	E	E	H	H	R	E	E		E

2 Use the following clues to find the appropriate natural fibre (A-K). Then choose from the two groups which characteristics describe each fibre.

Fibre	Fibre type	Characteristics
cotton	A	1
linen	B	2
nylon	C	3
polyester	D	4
wool	E	5
	F	6
	G	7
	H	8
	I	9
	J	10
	K	11

- strong, smooth, fine fibres, soft to touch
- Good strength, low stretching, no permanent creases, no iron
- Strong, very easy to wash, creases, dark, soft stretching
- Low tensile strength, soft, retains shape
- Soft, warm, shaggy, often heavy
- Strong, smooth, fine fibres, soft to touch

3 Follow the instructions for how to look after your fibres. Complete the tests using the words below.

Woolmark X + Acrylic = Fibrowashable + machine washable
 Cotton X + Wool = Wash Woolmark + Woolmark

When you buy your clothes, check the label.

Woolmark
 To keep your wool clothes in the best condition, hand wash or use the **Woolmark** cycle on your washing machine. Do not use a dryer. Do not use a tumble dryer.

Woolmark X
 To keep your wool clothes in the best condition, hand wash or use the **Woolmark X** cycle on your washing machine. Do not use a dryer. Do not use a tumble dryer.

Acrylic
 To keep your acrylic clothes in the best condition, hand wash or use the **Acrylic** cycle on your washing machine. Do not use a dryer. Do not use a tumble dryer.

Fibrowashable
 To keep your fibrowashable clothes in the best condition, hand wash or use the **Fibrowashable** cycle on your washing machine. Do not use a dryer. Do not use a tumble dryer.

Machine washable
 To keep your machine washable clothes in the best condition, hand wash or use the **Machine washable** cycle on your washing machine. Do not use a dryer. Do not use a tumble dryer.

31 Present tenses

A Sample sentences

The right department helps the trained people to do a better job and increase their skills. It also supplies them with materials and helps with the *work process* of the company. *It gives* good support in this kind of work. It also *is* there every day, *is* available around the clock. *It* is making good skills for you and *is* making you a skilled person. *It* is helping you to do your work. We have been making good packaging for many years and we are now *are* making it in your own country to be locally available.

B Form

Present simple and Present continuous

	Positive	Negative	Question
Present simple active	We work in the same field in our country.	The supplier doesn't work in our country.	Does he work in the same field?
Present simple passive	A good job is provided at the school.	The bill of going left isn't available?	Where is the good job?
Present continuous active	The supplier is working on the delivery.	We are not doing a good job of looking out of the product.	What are you doing on the factory?
Present continuous passive	There is a lot of work being done there.	The is not being paid for the training course.	Why is the training course being done?

Present perfect

	Positive	Negative	Question
Present perfect active	We have completed the new packaging job.	The supplier hasn't done the work yet.	Has he finished the job yet?
Present perfect passive	The work has been done.	The work hasn't been done yet.	Has the work been done yet?
Present perfect continuous active	We have been working on the job.	The supplier hasn't been working on the job yet.	Has he been working on the job?

Note: The present perfect continuous is used for very long time.

C Uses

The present simple is used when you are talking about:

The present continuous is used when:

1. you are doing an action which is continuing.

It is used to describe what is happening.

2. a job that is in progress.

What you are doing is being done.

The present perfect is used when:

1. you have finished an action which is completed.

Has he finished the work yet?

The present perfect continuous is used when:

1. you are doing an action which has not finished.

Has he been working on the job yet?

2. you are doing an action which is in progress and you are still doing it.

Has he been working on the job for a long time?

32 Past tenses

A Last week we began a study of writing to our four-year-old niece, which has been very much on the cards for a while. Our work has been to write when the results had been completed, to avoid making software to simulate the performance of the subject. This raised the question of how well they had performed under different conditions. While we were working on the topic of handwriting, another study was assessing the materials that we were using. After looking at the results of this study we

B Form

Key: simple and progressive

	Finite	Non-finite	Question
Simple present active	I am going to begin a new study.	We start the data for the lowest age group.	When you are going to start the study?
Simple present passive	The instructions of the software begin your answers!	The results begin to show.	When are you to be beginning the study?
Present continuous active	While the study is being carried out the first the other participants are not responding to the study.	When are you going to be carrying out the study?
Present continuous passive	While the study is being carried out the results are not being recorded.	Why are you being carried out the study?
	Participle	Non-finite	Question
Present participle active	are going to complete the results ...	looking at the first set of results for data.	When are you going to be completing the study?
Present participle passive	... the results are being carried out.	... because the data is not being recorded.	When are you going to be carrying out the study?
Present participle continuous active	is going to be carrying out the study yesterday ...	We had not been answering the questions when we started the study.	How long had you been carrying out the study?

realised that we might need to write a quite detailed and lengthy letter to my niece, so we have written the following.

C Uses

of the simple present used to represent future as definite time in the past

The present participle used to

represent a definite time in the past
represent a definite time in the past

The past participle used to

represent a definite time in the past

represent a definite time in the past

represent a definite time in the past

The present perfect used to

represent a definite time in the past

represent a definite time in the past

used to

represent a definite time in the past

used to represent a definite time in the past

used to represent a definite time in the past

used to represent a definite time in the past

used to represent a definite time in the past

TASKS

1 Match three present progressive sentences with the nouns in brackets.

- | | |
|--|--|
| 1 The building isn't being used as a school. | a You are going to replace the baby monitor. |
| 2 There is a building of ideas. | b We are going to start a new website. |
| 3 My friend isn't doing a presentation. | c The assembly isn't going to be cancelled. |
| 4 The website isn't still in the early stages of its development. | d We are going to increase it in the near future. |
| 5 This is a very slow mental process. | e The secretary is going to work on it. |
| 6 They will have been discussing it for years. | f We are going to introduce job rotation. |

2 In the following sentences change the words in brackets (1 point).

- You **are** understanding a colleague about the programme better now. (understand)
 - They **are** understanding it from the supplier all of a sudden.
 - She **is** understanding that you are missing the supplier all of a sudden.
- Two colleagues **are** talking about the firm's sales by hand now. (talk)
 - They **are** expected to **talk** about the firm's sales by hand in the next year.
 - The management **are** all **talking** to a customer by hand in the next year.
- Designers **are** discussing the site plan in the office. (discuss)
 - The team **is** **discussing** the site plan in the office in the future.
 - The use of a software **is** **discussing** to have five in the future.
- Two colleagues **are** discussing the results of an experiment before the seminar. (discuss)
 - They **are** **discussing** the results of an experiment before the seminar.
 - They **are** **discussing** the results of an experiment before the seminar.
- A worker **is** managing a lot of loading known to go on in the future. (manage)
 - They **will** **manage** the future work.
 - They **are** **managing** a lot of work in the future.

3 Read the text and underline a verb phrase in a present progressive form. Why do they say it with will or won't and a verb from the box?

John **is going to** open a new bank account. (open)
 He **isn't going to** open a new bank account. (open)

8. He **is going to** finish the report by 5.00. (finish) He **isn't going to** finish it.
9. He **is going to** have some food at 3.00. (eat) He **isn't going to** have any.
10. He **is going to** see his car. (see) He **isn't going to** see it.
11. We **are going to** F. (forget) He **isn't going to** forget it.
12. He **is going to** buy a new car. (buy) He **isn't going to** buy it.
13. How about a salad? (eat)
14. We **are going to** E. (eat) He **isn't going to** E.
15. He **is going to** see a doctor. (see) He **isn't going to** see one.
16. How about a salad? (eat)
17. He **is going to** see a doctor. (see) He **isn't going to** see one.

34 Conditionals

A Sample sentences

You'll like these movies if the rest of the cast performs quite well.
 You could find these two solutions together if you could solve one of the other.
 If you didn't make the mistake, the report would have contained these details.
 If you had tried, you could have done it easily.
 In most of our tests, we should consider a wide range of cases.

B Form

Conditional sentences can be divided into four types, depending on the use of the verb. There are three possible types of conditional sentence: conditional I, conditional II, conditional III and mixed conditional.

Conditional	if clause	main clause
I	present simple	will + verb
II	past simple	would/could/might + verb
III	past perfect	would/could/might + have + verb
Mixed	past simple	would + verb

Read the following sentences and choose the conditional type.

1. You'll be all right if you have a really good lawyer. 2. You could be a lawyer if you had a chance.

C Uses

We use conditional sentences to talk about the possibility of something happening or not happening.

There are four uses of the conditional: conditional I, conditional II, conditional III and mixed conditional.

Conditional I

Use the present tense in the if clause and will in the main clause.

If he/she/it goes to work, we will have an important meeting.

Conditional II

Use the past tense in the if clause and would/could/might in the main clause.

If he/she/it were to go to work, we would have an important meeting.

Conditional III

Use the past perfect tense in the if clause and would/could/might in the main clause.

If he/she/it had gone to work, we would have had an important meeting.

Mixed conditional

Use the present tense in the if clause and would/could/might in the main clause.

If he/she/it goes to work, we would have an important meeting.

Notes

- There are many uses of conditional I.
 - present simple in the if clause and will in the main clause
 - can be used to talk about a future possibility or prediction
- There are many uses of conditional II.
 - can be used to talk about a future possibility or prediction
 - can be used to talk about a hypothetical situation
 - can be used to talk about a hypothetical situation
- There are many uses of conditional III.
 - can be used to talk about a hypothetical situation
 - can be used to talk about a hypothetical situation
 - can be used to talk about a hypothetical situation

TASKS

- In the following sentences underline the verb and circle it if they do so by accident.
 - A computer sends the email signal so that it can be sent to the post.
 - My studies are made up of a lot of practice.
 - None of your car lights, be it a signal and a mirror, were switched.
 - Pauline had always wanted to be on the staff's surface.
 - The main aim of the film is to give an idea of the level of violence of the current and antiquated world.
 - Manufacturers use plastic materials for many different reasons.
 - It is important for us to get our work, culture and so on.

Here is a list of changes which have taken place in Britain between 1950 and today. Use these notes and the vocabulary in your dictionary to describe these changes.

Example: From black and white film.

1950	today	verb
no hotels	four hotels	build
one car	ten cars and	buy
small library	two library services	start
three libraries	ten libraries	build
few offices	three parts	start
few offices	two office blocks	build
no sport	two parks	build up
no sport	plans for a sport	plan

In the following diagrams of wood you are asked to describe what is shown in the correct form.



wood joint (a)



joint (b)



hole, joint (c)



two joints (d) and (e)

There are many ways of joining pieces of wood together in one way or another. You can find the _____, how to make joints. In this process, the _____ (don't) have a lot of other planks, but a hole is made into the plank of _____ (starting from the _____).
 They are called (a) _____ (b) _____ (c) _____ (d) _____ (e) _____ (f) _____ (g) _____ (h) _____ (i) _____ (j) _____ (k) _____ (l) _____ (m) _____ (n) _____ (o) _____ (p) _____ (q) _____ (r) _____ (s) _____ (t) _____ (u) _____ (v) _____ (w) _____ (x) _____ (y) _____ (z) _____ (aa) _____ (ab) _____ (ac) _____ (ad) _____ (ae) _____ (af) _____ (ag) _____ (ah) _____ (ai) _____ (aj) _____ (ak) _____ (al) _____ (am) _____ (an) _____ (ao) _____ (ap) _____ (aq) _____ (ar) _____ (as) _____ (at) _____ (au) _____ (av) _____ (aw) _____ (ax) _____ (ay) _____ (az) _____ (ba) _____ (bb) _____ (bc) _____ (bd) _____ (be) _____ (bf) _____ (bg) _____ (bh) _____ (bi) _____ (bj) _____ (bk) _____ (bl) _____ (bm) _____ (bn) _____ (bo) _____ (bp) _____ (bq) _____ (br) _____ (bs) _____ (bt) _____ (bu) _____ (bv) _____ (bv) _____ (bw) _____ (bx) _____ (by) _____ (bz) _____ (ca) _____ (cb) _____ (cc) _____ (cd) _____ (ce) _____ (cf) _____ (cg) _____ (ch) _____ (ci) _____ (cj) _____ (ck) _____ (cl) _____ (cm) _____ (cn) _____ (co) _____ (cp) _____ (cq) _____ (cr) _____ (cs) _____ (ct) _____ (cu) _____ (cv) _____ (cw) _____ (cx) _____ (cy) _____ (cz) _____ (da) _____ (db) _____ (dc) _____ (dd) _____ (de) _____ (df) _____ (dg) _____ (dh) _____ (di) _____ (dj) _____ (dk) _____ (dl) _____ (dm) _____ (dn) _____ (do) _____ (dp) _____ (dq) _____ (dr) _____ (ds) _____ (dt) _____ (du) _____ (dv) _____ (dv) _____ (dw) _____ (dx) _____ (dy) _____ (dz) _____ (ea) _____ (eb) _____ (ec) _____ (ed) _____ (ee) _____ (ef) _____ (eg) _____ (eh) _____ (ei) _____ (ej) _____ (ek) _____ (el) _____ (em) _____ (en) _____ (eo) _____ (ep) _____ (eq) _____ (er) _____ (es) _____ (et) _____ (eu) _____ (ev) _____ (ev) _____ (ew) _____ (ex) _____ (ey) _____ (ez) _____ (fa) _____ (fb) _____ (fc) _____ (fd) _____ (fe) _____ (ff) _____ (fg) _____ (fh) _____ (fi) _____ (fj) _____ (fk) _____ (fl) _____ (fm) _____ (fn) _____ (fo) _____ (fp) _____ (fq) _____ (fr) _____ (fs) _____ (ft) _____ (fu) _____ (fv) _____ (fv) _____ (fw) _____ (fx) _____ (fy) _____ (fz) _____ (ga) _____ (gb) _____ (gc) _____ (gd) _____ (ge) _____ (gf) _____ (gg) _____ (gh) _____ (gi) _____ (gj) _____ (gk) _____ (gl) _____ (gm) _____ (gn) _____ (go) _____ (gp) _____ (gq) _____ (gr) _____ (gs) _____ (gt) _____ (gu) _____ (gv) _____ (gv) _____ (gw) _____ (gx) _____ (gy) _____ (gz) _____ (ha) _____ (hb) _____ (hc) _____ (hd) _____ (he) _____ (hf) _____ (hg) _____ (hh) _____ (hi) _____ (hj) _____ (hk) _____ (hl) _____ (hm) _____ (hn) _____ (ho) _____ (hp) _____ (hq) _____ (hr) _____ (hs) _____ (ht) _____ (hu) _____ (hv) _____ (hv) _____ (hw) _____ (hx) _____ (hy) _____ (hz) _____ (ia) _____ (ib) _____ (ic) _____ (id) _____ (ie) _____ (if) _____ (ig) _____ (ih) _____ (ii) _____ (ij) _____ (ik) _____ (il) _____ (im) _____ (in) _____ (io) _____ (ip) _____ (iq) _____ (ir) _____ (is) _____ (it) _____ (iu) _____ (iv) _____ (iv) _____ (iw) _____ (ix) _____ (iy) _____ (iz) _____ (ja) _____ (jb) _____ (jc) _____ (jd) _____ (je) _____ (jf) _____ (jg) _____ (jh) _____ (ji) _____ (jj) _____ (jk) _____ (jl) _____ (jm) _____ (jn) _____ (jo) _____ (jp) _____ (jq) _____ (jr) _____ (js) _____ (jt) _____ (ju) _____ (jv) _____ (jv) _____ (jw) _____ (jx) _____ (jy) _____ (jz) _____ (ka) _____ (kb) _____ (kc) _____ (kd) _____ (ke) _____ (kf) _____ (kg) _____ (kh) _____ (ki) _____ (kj) _____ (kk) _____ (kl) _____ (km) _____ (kn) _____ (ko) _____ (kp) _____ (kq) _____ (kr) _____ (ks) _____ (kt) _____ (ku) _____ (kv) _____ (kv) _____ (kw) _____ (kx) _____ (ky) _____ (kz) _____ (la) _____ (lb) _____ (lc) _____ (ld) _____ (le) _____ (lf) _____ (lg) _____ (lh) _____ (li) _____ (lj) _____ (lk) _____ (ll) _____ (lm) _____ (ln) _____ (lo) _____ (lp) _____ (lq) _____ (lr) _____ (ls) _____ (lt) _____ (lu) _____ (lv) _____ (lv) _____ (lw) _____ (lx) _____ (ly) _____ (lz) _____ (ma) _____ (mb) _____ (mc) _____ (md) _____ (me) _____ (mf) _____ (mg) _____ (mh) _____ (mi) _____ (mj) _____ (mk) _____ (ml) _____ (mm) _____ (mn) _____ (mo) _____ (mp) _____ (mq) 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_____ (qa) _____ (qb) _____ (qc) _____ (qd) _____ (qe) _____ (qf) _____ (qg) _____ (qh) _____ (qi) _____ (qj) _____ (qk) _____ (ql) _____ (qm) _____ (qn) _____ (qo) _____ (qp) _____ (qq) _____ (qr) _____ (qs) _____ (qt) _____ (qu) _____ (qv) _____ (qv) _____ (qw) _____ (qx) _____ (qy) _____ (qz) _____ (ra) _____ (rb) _____ (rc) _____ (rd) _____ (re) _____ (rf) _____ (rg) _____ (rh) _____ (ri) _____ (rj) _____ (rk) _____ (rl) _____ (rm) _____ (rn) _____ (ro) _____ (rp) _____ (rq) _____ (rr) _____ (rs) _____ (rt) _____ (ru) _____ (rv) _____ (rv) _____ (rw) _____ (rx) _____ (ry) _____ (rz) _____ (sa) _____ (sb) _____ (sc) _____ (sd) _____ (se) _____ (sf) _____ (sg) _____ (sh) _____ (si) _____ (sj) _____ (sk) _____ (sl) _____ (sm) _____ (sn) _____ (so) _____ (sp) _____ (sq) _____ (sr) _____ (ss) _____ (st) _____ (su) _____ (sv) _____ (sv) _____ (sw) _____ (sx) _____ (sy) _____ (sz) _____ (ta) _____ (tb) _____ (tc) _____ (td) _____ (te) _____ (tf) _____ (tg) _____ (th) _____ (ti) _____ (tj) _____ (tk) _____ (tl) _____ (tm) _____ (tn) _____ (to) _____ (tp) _____ (tq) _____ (tr) _____ (ts) _____ (tt) _____ (tu) _____ (tv) _____ (tv) _____ (tw) _____ (tx) _____ (ty) _____ (tz) _____ (ua) _____ (ub) _____ (uc) _____ (ud) _____ (ue) _____ (uf) _____ (ug) _____ (uh) _____ (ui) _____ (uj) _____ (uk) _____ (ul) _____ (um) _____ (un) _____ (uo) _____ (up) _____ (uq) _____ (ur) _____ (us) _____ (ut) _____ (uu) _____ (uv) _____ (uv) _____ (uw) _____ (ux) _____ (uy) _____ (uz) _____ (va) _____ (vb) _____ (vc) _____ (vd) _____ (ve) _____ (vf) _____ (vg) _____ (vh) _____ (vi) _____ (vj) _____ (vk) _____ (vl) _____ (vm) _____ (vn) _____ (vo) _____ (vp) _____ (vq) _____ (vr) _____ (vs) _____ (vt) _____ (vu) _____ (vv) _____ (vv) _____ (vw) _____ (vx) _____ (vy) _____ (vz) _____ (wa) _____ (wb) _____ (wc) _____ (wd) _____ (we) _____ (wf) _____ (wg) _____ (wh) _____ (wi) _____ (wj) _____ (wk) _____ (wl) _____ (wm) _____ (wn) _____ (wo) _____ (wp) _____ (wq) _____ (wr) _____ (ws) _____ (wt) _____ (wu) _____ (wv) _____ (wv) _____ (ww) _____ (wx) _____ (wy) _____ (wz) _____ (xa) _____ (xb) _____ (xc) _____ (xd) _____ (xe) _____ (xf) _____ (xg) _____ (xh) _____ (xi) _____ (xj) _____ (xk) _____ (xl) _____ (xm) _____ (xn) _____ (xo) _____ (xp) _____ (xq) _____ (xr) _____ (xs) _____ (xt) _____ (xu) _____ (xv) _____ (xv) _____ (xw) _____ (xx) _____ (xy) _____ (xz) _____ (ya) _____ (yb) _____ (yc) _____ (yd) _____ (ye) _____ (yf) _____ (yg) _____ (yh) _____ (yi) _____ (yj) _____ (yk) _____ (yl) _____ (ym) _____ (yn) _____ (yo) _____ (yp) _____ (yq) _____ (yr) _____ (ys) _____ (yt) _____ (yu) _____ (yv) _____ (yv) _____ (yw) _____ (yx) _____ (yy) _____ (yz) _____ (za) _____ (zb) _____ (zc) _____ (zd) _____ (ze) _____ (zf) _____ (zg) _____ (zh) _____ (zi) _____ (zj) _____ (zk) _____ (zl) _____ (zm) _____ (zn) _____ (zo) _____ (zp) _____ (zq) _____ (zr) _____ (zs) _____ (zt) _____ (zu) _____ (zv) _____ (zv) _____ (zw) _____ (zx) _____ (zy) _____ (zz) _____

A Simple sentences

The auxiliary verbs *to be* (helping, auxiliary, and driver) + main verb are used to form the active and passive infinitives, gerunds and participles. The auxiliary verb *to be* is used to form the related verbal nouns, to express the gerundive and to give other verbal nouns. The infinitive form of the verb is used to form the infinitive and the gerundive. The gerundive is used to form the gerundive and the gerundive infinitive. The gerundive is used to form the gerundive and the gerundive infinitive. The gerundive is used to form the gerundive and the gerundive infinitive.

B Form

Verbs can be divided into obligation verbs by following the steps:

- Obligations are those that:
 - obligate or deobligate
 - obligate or deobligate to prohibit
 - are obligate

Verbs can also be categorized from the point of view of the way in which they mark the obligator (prohibitor) and the person or thing to be obligated (beneficiary):

1. The use of *to be* will be noted 1-6.
2. The change in verbs for the obligator:

- | | |
|--------------------------------|--|
| 1. Obligations to deobligate | <i>to obligate + not to be + form of main verb</i>
<i>to deobligate + to be</i> |
| 2. Obligations to prohibit | <i>to obligate + not to + form of main verb</i> |
| 3. No obligation to deobligate | <i>not to obligate + not to be + not to be + form of main verb</i>
<i>not to deobligate</i> |

3. The change in verbs for the obligator:

- | | |
|--------------------------------|--|
| 4. Obligations to prohibit | <i>to be obliged to + to be required to + to be obliged to</i>
<i>to be obliged to + not to + not to be</i> |
| 5. Obligations to prohibit | <i>to be obliged to + not to + not to be + form of main verb</i>
<i>to be obliged to + not to + not to be + form of main verb</i> |
| 6. No obligation to deobligate | <i>do not obligate + not to be + not to be</i> |

C Uses

- | | |
|---|---|
| 1. <i>To be</i> obligations to deobligate
The verb <i>to be</i> is used to deobligate the person or thing to be deobligated.
The verb <i>to be</i> is used to deobligate the person or thing to be deobligated.
The verb <i>to be</i> is used to deobligate the person or thing to be deobligated. | 4. <i>To be</i> obligations to prohibit
The verb <i>to be</i> is used to prohibit the person or thing to be prohibited.
The verb <i>to be</i> is used to prohibit the person or thing to be prohibited. |
| 2. <i>To be</i> obligations to prohibit
The verb <i>to be</i> is used to prohibit the person or thing to be prohibited.
The verb <i>to be</i> is used to prohibit the person or thing to be prohibited. | 5. <i>To be</i> obligations to prohibit
The verb <i>to be</i> is used to prohibit the person or thing to be prohibited.
The verb <i>to be</i> is used to prohibit the person or thing to be prohibited. |
| 3. <i>Not to be</i> obligations to deobligate
The construction <i>not to be</i> is used to deobligate the person or thing to be deobligated.
The construction <i>not to be</i> is used to deobligate the person or thing to be deobligated. | 6. <i>To be</i> obligations to prohibit
The verb <i>to be</i> is used to prohibit the person or thing to be prohibited.
The verb <i>to be</i> is used to prohibit the person or thing to be prohibited. |

TASKS

1



Check each sign carefully for each picture. There are five signs for each picture.

- You must wear the correct footwear.
- You are required to wear a uniform in this area.
- Authorised personnel only permitted here.
- You must be accompanied.
- A fire extinguisher needs to be placed here.
- You are forbidden to drink alcohol here.
- You must be accompanied when you are here.
- You are permitted alcohol after this point.

2

Read the following sentences and choose the best answer to complete them.

- Some children are forbidden from in the swimming pool.
- The of the school is responsible for the school's discipline.
- There is a on the school that says you are not allowed to drink alcohol.
- They don't children from using mobile phones.
- It is for children to be in the swimming pool without a lifeguard.
- Children are not allowed to in the swimming pool.

3

Read the text and write a letter from an insurance agent to a manufacturing company about their employees. Complete the contract by choosing the correct word from the box.

words = permit + contract + factory + injury + risk + accident
 phrases = while + while (2) + before

Below is the contract for factory employees. I am writing to ask you to read it and to let me know if you are happy to accept the terms. You must read it carefully before you sign it, as it is a legal contract.

- A factory employee not be used in the production area. The person must be wearing a hard hat and safety glasses at all times working in this area.
- The government the company of work if there is a major fire and if certain things apply for a certain time period. However, prior to doing this, the company to first discuss with the government and legal advisers over the contract.
- Contract that contain favorable terms is at least 10 minutes before the meeting.
- There is a risk every when a machine is used. rules are always there.
- While working the company must not be any amount of time. It must be signed and dated.
- The use of some fire extinguishers on the work for use in a certain situation.

39 Cause and effect

A Sample sentences

He was going to start the machine to blow away the snow, and it began to rain. He was the first to take in the new products, so he got to use them first.

As a result of the high cost of fuel, many motorists were going to start buying more fuel-efficient cars. A lot of scientists have been trying to find ways of producing artificial rain.

She felt guilty and disappointed for not being prepared for the arrival of their son.

B Form

1. Cause and effect

Use *because* to show a reason for the effect and the result:

She was late for work **because** she had a headache. The car broke **because** it was too old. He got the promotion **because** he had a lot of experience.

EXAMPLES

2. Result clause

Use *so* to show a result or consequence:

It was very noisy, **so** she closed the door. He felt nervous, **so** he took 10 deep breaths. The car broke down, **so** he called a taxi. She was surprised, **so** she didn't say anything.

EXAMPLES

When he was young, he was afraid of the dark, **so** he never went out at night.

Because of the very high cost of raw materials, many manufacturers have had to raise their prices, **so** many consumers are buying less.

3. Linking two parts of a text

Use a *cause and effect* sentence linker to link two parts of a text to show a cause and effect:

The weather was so hot that the temperature of the sea started to rise. As a result of the increase in the cost of fuel, many motorists are buying more fuel-efficient cars. Because of the effect of the high cost of fuel, many motorists are buying more fuel-efficient cars.

EXAMPLES

C Uses

Look at the ideas to help you write an appropriate text and to appreciate a piece of writing.

- What are the reasons for your recent problems?
- Because of management's thinking of increasing sales, we had to change our way of working. It was very important to look at our main products to produce it.
- So, that's why everyone has been so busy in the morning.
- Exactly why we've scheduled a lot of things is being discussed at the moment.
- But, I don't think you have been so interested.
- Yes, but because of the increase in the price of the fuel, the car has to be so.

- 1 Match one part of a sentence from A and one from B to form sentences that state a fact.

A

The following are facts:
 There is now a backlog of orders.
 The system is increasingly business-friendly.
 It is not used.
 We have developed a computer network.
 Computer technology has been made more usable.
 The bank set up a computer network.
 We are doing more work on paper.
 It is a more open environment.
 The system is following safety regulations.

B

being to use the system. It is not developed
 easily, as we called it too late to build.
 Consequently, some companies have not
 returned.
 Location of services often seems better
 solutions. It is not likely to be a real
 solution.
 That's the reason for the accident.
 As a result of increasing production,
 it is not possible to control the
 manufacturing process of the
 system.

- 2 The following sentences contain a mistake. Find the mistake and correct it.

- The appearance of living objects on our planet started long ago.
- The first evidence they appeared in the oceans was when they started to fly.
- The first living beings were plants, the first life on land.
- The concentration of plants was higher in the oceans, and this is why the first life was first developed when it could be used.
- The first life was first developed in the oceans, and this is why the first life was first developed when it could be used.
- The first life was first developed in the oceans, and this is why the first life was first developed when it could be used.

- 3 How to predict obligations between an accident and
 someone who is involved in a legal hearing
 decision? Fill in the blanks with a verb from the box.

was - because of - why
 the hearing - was - was - was
 the hearing - was - was - was

A: So, there are the field of study for the hearing decision. The other way probably
 was to have, which part of _____ of the system was to be used in the
 report of the hearing _____ of the system will be a more than expected. As for
 the hearing, the hearing was first developed in the oceans, and this is why the first life was first developed when it could be used.

B: Why does that matter?

A: It is a hearing. It is an act of the hearing. The hearing was first developed in the oceans, and this is why the first life was first developed when it could be used.

B: I see. How was that for the hearing?

A: Well, the hearing was first developed in the oceans, and this is why the first life was first developed when it could be used.

B: So, what is the hearing, and how is it used?

A: That's the hearing. It is an act of the hearing. The hearing was first developed in the oceans, and this is why the first life was first developed when it could be used.

TASKS

1 Match each part of a sentence from A and the part of its long sentence in B. Write the letter.

<p>A</p> <p>1. The engine parts of the car are made of steel.</p> <p>2. The age of the car depends on how long it has been used.</p> <p>3. A machine developer must be responsible for the appearance and reliability of the car.</p> <p>4. The car must be safe.</p> <p>5. The car must be easy to use.</p>	<p>B</p> <p>1. The engine of a car is made of steel because of its strength and reliability.</p> <p>2. The age of the car depends on how long it has been used because the longer it is used, the more it wears.</p> <p>3. A machine developer must be responsible for the appearance and reliability of the car because the car must be safe and reliable.</p> <p>4. The car must be safe and reliable because it must be used every day.</p> <p>5. The car must be easy to use because it must be used every day.</p>
---	--

2 There are mistakes in each of the following sentences. Circle the mistake and correct it.

1. All our students passed the exam and had to work together.
2. Making regular payments of a bill is the use of a debit or credit card.
3. Only only smaller companies could have been responsible for the problem.
4. As people are getting older, they are getting older.
5. There is a great big hole in the top of the car.
6. Designers can be judged by the number of cars they have designed.
7. We think we have found a way to solve the problem.
8. As people know the price of a product, they will buy it.

3 Read the following extract from a brochure about cars. Circle the mistakes in B and change them for a better word phrase from the opposite page. Change the grammar of B if necessary.

One feature of a car is its reliability. The car must be able to run for a long time. The car must be able to run for a long time. The car must be able to run for a long time. The car must be able to run for a long time.

The car must be able to run for a long time. The car must be able to run for a long time. The car must be able to run for a long time. The car must be able to run for a long time. The car must be able to run for a long time.

The car must be able to run for a long time. The car must be able to run for a long time. The car must be able to run for a long time. The car must be able to run for a long time. The car must be able to run for a long time.

prevent when you are driving. The car must be able to run for a long time.

The car must be able to run for a long time. The car must be able to run for a long time. The car must be able to run for a long time. The car must be able to run for a long time.

The car must be able to run for a long time. The car must be able to run for a long time. The car must be able to run for a long time. The car must be able to run for a long time.

The car must be able to run for a long time. The car must be able to run for a long time. The car must be able to run for a long time. The car must be able to run for a long time.

43 Subordinate clauses of result and purpose

A Sample sentences

Benji drove 15000 miles in the last 12 months, so he bought a new, reliable petrol car. (purpose)
 He drove 15000 miles in the last 12 months, so that he didn't have to go to work to buy a new car.
 (result)

Maria had a brilliant quality in her programme, so it was a great success.
 We were late for the all-proposals final because the cultural week was cancelled.
 (purpose) (result) (purpose) (purpose) (purpose) (purpose) (purpose) (purpose) (purpose)

B Form

1. A verb phrase followed by a verb and the clause. This is the typical construction.

1. *He drove 15000 miles in the last 12 months* so *he bought a new, reliable petrol car.*
2. *He drove 15000 miles in the last 12 months* so *that he didn't have to go to work to buy a new car.*
3. *He drove 15000 miles in the last 12 months* so *that he didn't have to go to work to buy a new car.*
4. *He drove 15000 miles in the last 12 months* so *that he didn't have to go to work to buy a new car.*
5. *He drove 15000 miles in the last 12 months* so *that he didn't have to go to work to buy a new car.*
6. *He drove 15000 miles in the last 12 months* so *that he didn't have to go to work to buy a new car.*

The main clause with a verb and a verb phrase: *He drove 15000 miles in the last 12 months.*

The verb phrase with a verb and a verb phrase: *he bought a new, reliable petrol car.*

Note the negative form:

So he drove 15000 miles in the last 12 months, so that he didn't have to go to work to buy a new car.
 He drove 15000 miles in the last 12 months, so that he didn't have to go to work to buy a new car.

C Uses

1. *He drove 15000 miles in the last 12 months, so he bought a new, reliable petrol car.* They present the purpose of the subordinate clause.

2. *He drove 15000 miles in the last 12 months, so that he didn't have to go to work to buy a new car.* They typically lead to the purpose clause, but can also lead to the main clause.

3. *He drove 15000 miles in the last 12 months, so that he didn't have to go to work to buy a new car.* They typically lead to the main clause, but can also lead to the subordinate clause.

Note the use of the verb *so* in the main clause and the verb *so that* in the subordinate clause.

1. We use *so* to indicate a result or purpose, when the action of both clauses is the same.
 (purpose) (purpose) (purpose) (purpose) (purpose) (purpose) (purpose) (purpose) (purpose)
2. We use *so that* to indicate a result or purpose, when the action of the main clause is different from the action of the subordinate clause.
 (purpose) (purpose) (purpose) (purpose) (purpose) (purpose) (purpose) (purpose) (purpose)
3. We use *so that* to indicate a result or purpose, when the action of the main clause is the same as the action of the subordinate clause.
 (purpose) (purpose) (purpose) (purpose) (purpose) (purpose) (purpose) (purpose) (purpose)

Note:

1. He drove 15000 miles in the last 12 months, so he bought a new, reliable petrol car.
2. He drove 15000 miles in the last 12 months, so that he didn't have to go to work to buy a new car.
3. He drove 15000 miles in the last 12 months, so that he didn't have to go to work to buy a new car.
4. He drove 15000 miles in the last 12 months, so that he didn't have to go to work to buy a new car.

TASKS

1 Think of the following nouns and decide if they are countable and write them in the appropriate column below.

oil • fish • electricity • explanation • history • coal • information • labour •
 machine • economy • investment • pollution • whisky • job • water

Countable	Uncountable

2 Complete the sentences with the information from the text about the situation of
 recovery.

Jobs in the UK • investment • energy • research • progress • investment • recovery

- The European Community has prepared guidelines to assist
- Companies need to work in order to be as good as those they face, both in terms of
- development of the new world and _____ in the future.
- The main aim of the funding is to build a _____.
- Private companies have a great investment of £1 _____.
- It is expected that the _____ in the field of investment will be around 10%.
- It is also expected that the population of the UK will _____ in the next 10 years.
- Investment in research and _____ of children's reading books.

3 Think of the numbered lines below from the article. Match the information with the
 sentences.

- The weather is hot. The hills are lush and green and the water is warm.
- They often take a boat on the sea and enjoy the view of the coast.
- It is a beautiful area with a warm climate and the sea is very blue.
- Children enjoy the water and the sun and the view of the sea.
- Local food and drink is very good.
- It is a beautiful area with a warm climate and the sea is very blue.
- It is a beautiful area with a warm climate and the sea is very blue.
- It is a beautiful area with a warm climate and the sea is very blue.
- It is a beautiful area with a warm climate and the sea is very blue.

45 Comparison of adjectives

A Simple sentences

- Indicate the form of the adjective in the following sentences. Indicate the form of the adjective in the following sentences.
1. The most intelligent of all animals is the octopus, a creature with a very high IQ.
2. The most interesting of all the books I have read is 'The Hobbit' by J.R.R. Tolkien.
3. The most interesting of all the books I have read is 'The Hobbit' by J.R.R. Tolkien.

B Form

- Write down the comparative and superlative forms of the following adjectives.
1. interesting, boring, exciting, surprising, surprising, surprising, surprising
2. interesting, boring, exciting, surprising, surprising, surprising, surprising
3. interesting, boring, exciting, surprising, surprising, surprising, surprising

1. If the positive adjective has one syllable, we form the comparative by adding -er and the superlative by adding -est.

positive	comparative	superlative
short	shorter	shortest
wide	wider	widest

If the positive adjective has two syllables, we form the comparative

by adding -er and the superlative by adding -est.

If the positive adjective has three syllables, we form the comparative

by adding more and the superlative by adding most.

2. If the positive adjective has one syllable and ends in -y, we form the comparative by adding -ier and the superlative by adding -iest.

positive	comparative	superlative
happy	happier	happiest
easy	easier	easiest
simple	simpler	simplest

If the positive adjective has two syllables and ends in -y, we form the comparative and superlative

- by adding -er and the superlative by adding -est. The only adjective with a vowel in the middle is 'dangerous'.

positive	comparative	superlative
dangerous	more dangerous	most dangerous
known	more known	most known

3. There is a small group of adjectives with irregular comparatives and superlatives.

positive	good	bad	little	many	few
comparative	better	worse	less	more	fewer
superlative	best	worst	least	most	fewest

C Uses

1. If we compare several people, we need to use the comparative.
2. If we compare more than two objects, we need to use the superlative.
3. If we compare more than two objects, we need to use the superlative.

TASK 5

1 Complete the table.

adjective	comparative	superlative
exciting	more exciting	the most exciting
fun		
modern		
new		
pretty		
big		
big		
important		
big		

2 Five of the sentences below contain a mistake. Find the mistake, underline it.

- The old bridge is the best quality we produce.
- It takes us fifteen years more people how that it is led by medical scientists originally to build.
- My father and I spent our childhood in a small town in 1950's.
- There is a very good reason why we should be similar to the other cities.
- The bridge is not only one of the most important structures in the area.
- The new bridge is a hundred times longer.
- Their designs should be kept in good maintenance for a long.
- Building the good bridge is certainly from a good but it takes a long time to get it.

3 Use the information in the table to complete the sentences below.

Bridge	Type of bridge	Length of span	
		meters	feet
Brooklyn Bridge, New York	hanger span	1,470	4,824
Golden Gate Bridge, USA	hanger span	1,900	6,233
Walt Whitman Memorial Bridge, USA	hanger span	1,290	4,232
Clifton Bridge, Canada	arch span	140	460
Hampton Court Railway Bridge, London	cantilever	521	1,726
Clifton Suspension Bridge, UK	hanger span	140	460
New River Gorge, USA	rock arch	310	1,017
Severn Railway Bridge, UK	cantilever	648	2,126

The Harbin Bridge is the longest (long) cable-stayed bridge in the world.
 It is 100 (hundred) metres long. The Golden Gate Bridge is the second (two) longest bridge
 in the USA. The Clifton Memorial Bridge is the USA's shortest (short) cable-stayed bridge.
 It is 140 (one hundred and forty) metres long. The Clifton Bridge in Canada is the second (two)
 longest arch bridge in the world. It is 140 (one hundred and forty) metres long.
 In Scotland, the Clifton Suspension Bridge is 140 (one hundred and forty) metres long.
 It is the Clifton Suspension Bridge which is also the second (two) longest suspension bridge
 in the world. The Clifton Suspension Bridge is 140 (one hundred and forty) metres long.
 It is 140 (one hundred and forty) metres long. The Clifton Suspension Bridge is 140 (one hundred and forty) metres long.

46 Adjectives and adverbs

A Simple sentences

Find the errors in the following sentences and rewrite them correctly:

1. The car is very fast, it is very comfortable and it is very cheap. (The car is very fast, it is very comfortable and it is very cheap.)

2. The field is very wide, it is very high and it is very deep. (The field is very wide, it is very high and it is very deep.)

B Form

Adjectives and adverbs are grammatical forms.

1. Adjectives and adverbs have the same form in all cases.

quickly	quickly	is	quickly
is	quickly	is	quickly
quickly	quickly	is	quickly
is	quickly	is	quickly
quickly	quickly	is	quickly

2. Adjectives and adverbs have the same form in all cases.

quickly, quickly, quickly, quickly, quickly, quickly

3. Adjectives and adverbs have the same form in all cases.

quickly	quickly	quickly	quickly	quickly	quickly	quickly
quickly	quickly	quickly	quickly	quickly	quickly	quickly

4. Adjectives and adverbs have the same form in all cases.

quickly, quickly, quickly, quickly, quickly

Adjectives and adverbs have the same form in all cases.

Through the field and across the field, the car is very

C Uses

Adjectives and adverbs

1. To give more information about a noun

The car is very **quickly** and **quickly**.

[quickly] [quickly]

The car is very **quickly** and **quickly**.

2. To describe a verb

The car is very **quickly**.

Adjectives and adverbs

1. To give more information about a noun

The car is very **quickly** and **quickly**.

[quickly] [quickly]

The car is very **quickly** and **quickly**.

2. To describe a verb

The car is very **quickly**.

The car is very **quickly**.

3. To describe a noun

The car is very **quickly**.

[quickly] [quickly]

4. To describe a verb

The car is very **quickly**.

TASKS

- 1 Write a register for the following words taking the correct affix and use as many affixes as you can. Add the affixes.

enough	try	experiment
oil	right	wind
right	change	fact
and	good	train
to-day		

- 2 Complete the following sentences with the adjectives in brackets. Use each word only once.

- The seawall is not very _____, it has to be _____ temporary during winter and summer.
- New technology will have made the process of making _____, giving several different _____ of the product.
- The main business _____ operation of the part. There is a lot of equipment available _____.
- We need to do a lot of _____ work in the evening. Machines don't shut down _____.
- The company's working plans followed in _____ financial progress. The chief priority was to _____ their overall performance.
- It's a pity that it can't be _____ because it would be so useful. There is a lot of good _____, a _____ can be made from it.

- 3 Read part of a presentation about furniture exports to the UK. Choose the correct word to fill in.

The number of exports of furniture to the UK is **(1)** manufacturing/manufactured. Industry in the UK has fallen **(2)** considerably/considerably over the last 50 years. Today, it employs **(3)** approximately/approximate 100,000 people. The UK exports clothing and carpets **(4)** more/more than **(5)** important/importantly for safety (the UK) in seeing **(6)** manufacturing/make in fabric **(7)** it. Industrial/Industrial cells applications, fabrics are used **(8)** increasingly/increasingly in the furniture and interior **(9)** make from. The export is seen **(9)** mainly/mostly and products are returned **(10)** consistently/consistently over the last 10 years. The UK also has a **(11)** significant/significantly silk industry which produces over 0.70 million worth of goods **(12)** continuously. The UK has a wide **(13)** of **(14)** excellent/excellently reputation for quality and service and British exports in this way are **(15)** healthy/healthily. The UK is expected to maintain its **(16)** export/exported value **(17)** for a **(18)** **(19)** important/importantly in the **(20)** diversified **(21)** industry. The manufacturing of furniture is **(22)** up **(23)** rapidly/rapidly among the **(24)** of **(25)** carpet **(26)** increase in the **(27)** of **(28)** **(29)** significant/significantly. Factors **(30)** relative **(31)** for **(32)** particular/particularly **(33)** stages **(34)** of **(35)** **(36)** highly/highly **(37)** quality **(38)** of the **(39)** market.

47

Prepositions of time

A Sample sentences

The director **was** *in* the office **at** 10.00, but *wasn't* *in* there **by** 11.00. There *wasn't* *any* *one* *there* **at** 11.30, but *was* *in* there **at** 12.00. He *didn't* *get* *to* *know* *anyone* *there* **at** 12.00, but *did* *get* *to* *know* *somebody* *there* **at** 12.30. They *didn't* *start* *working* *there* **at** 12.30, but *did* *start* *working* *there* **at** 1.00. They *didn't* *finish* *their* *work* *there* **at** 1.00, but *did* *finish* *their* *work* *there* **at** 1.30. They *didn't* *leave* *there* **at** 1.30, but *did* *leave* *there* **at** 2.00. They *didn't* *arrive* *there* **at** 2.00, but *did* *arrive* *there* **at** 2.30.

B Form

A preposition comes before a verb, e.g. *He* *wasn't* *in* *there* *at* *10.00*.

When the verb is followed by another verb, the preposition follows the first verb, e.g. *He* *didn't* *start* *working* *there* *at* *12.30*.

Note: He *didn't* *start* *working* *there* *at* *12.30* is not a correct sentence.

The most frequent prepositions of time are:

at + a point in time + *at* + a date + *at* + a time of day
at + a point in time + *at* + a date + *at* + a time of day

at + a point in time + *at* + a date + *at* + a time of day

at + a point in time + *at* + a date + *at* + a time of day

C Uses

- at**
 - at a point in time
 - at a date of the week or Tuesday
 - at a point of the day or at 10.00
- at**
 - at a point in time
 - at a date of the week or Tuesday
 - at a point of the day or at 10.00
- at**
 - at a point in time
 - at a date of the week or Tuesday
 - at a point of the day or at 10.00

TASK 6

1 Put the following words in order from furthest to the least.

- 1 seven million dollars, a couple of billions
- 2 five hundred million, a couple of billions
- 3 80% of our debt, a couple of billions
- 4 10% of our debt, a couple of billions
- 5 20% of our debt, a couple of billions
- 6 30% of our debt, a couple of billions
- 7 20% of our debt, a couple of billions
- 8 20% of our debt, a couple of billions

2 Complete the sentences with the word given in brackets.

- 1 The number of _____ people working in the _____ of financial services has increased rapidly in the last decade.
- 2 _____ of the population have been forced to work very long hours. The last business _____ of the decade is forecast.
- 3 The data indicate that _____ a lot of money will have to be _____ to fund the new projects.
- 4 The government will be asked to finance the _____ health care programme. The state will _____ of new measures aimed at the system's financial crisis.
- 5 All present and _____ agencies plan to use the information _____ from paper archives to develop and expand public _____.
- 6 In the last _____ decade, the number of business owners of small firms and very _____ manufacturing companies has significantly declined. They need _____.

3 The table below shows the methods of transport used by a company based in London, a period of 10 years. Complete the text below with words from the table in Russian to give a 20%.

Year	1970	1980	1990	2000	2010
air	10%	20%	30%	40%	50%
road	50%	40%	30%	20%	10%
sea	20%	30%	5%	20%	30%

In 1970 _____ all _____ transport was carried out by air. By _____ goods were carried by road. In the 1980s _____ goods were transported by _____ and _____ air was the most _____ for the goods being transported. In 1990 the pattern changed with _____ goods were still being transported by air. However, _____ more transport was by road and a lot _____ goods being transported. In the year 2000 _____ was still _____ by road and air. By the year 2010 it appeared that _____ goods will be transported by air. In _____ goods will be transported by air. _____ will be used by air.

50 Contrasting ideas

A Sample sentences

Although it is a very popular form of personal communication, people are not always content with the number of lines in an e-mail message. As this improves, it takes on a more formal appearance, with a subject line, a salutation, a sign-off, and a date.

B Form

It is an **adverbial clause** which is used to position the clause.

1 Clause position

They could be a few days before we see him and I miss his dog.

Just though the number of lines you use is not too large, I find I miss even a high level of detail.

They miss what they've given up.

although + clause / even though + clause / even when + clause

Notice the difference in position for each sentence.

They miss what they've given up, but they've also given up a part of their life.

Although it was raining, they went to the match. It had to go on to be a very long one.

2 Clause content

The clause is often an **adverbial phrase** (e.g. *before we see him*).

We're happy to say that we've found the swimming centre.

just as / when

The clause is often an **adjective phrase** (e.g. *very long*).

It has an **adjective phrase** (e.g. *very long*) in the main clause.

The clause is **main clause** (e.g. *it was a very long one*).

as well as / as well

3 Clause structure of main clause

It is often a **complete clause** (e.g. *we've found it*) or **verb phrase** (e.g. *we've found it*).

So can't think of a better way to say it. **When we've found it, we'll be able to.**

The main clause **verb phrase** is:

as well as / as well + verb phrase + however + verb phrase + as well as / as well

C Uses

1. To **contrast** things (A & B).

a) Although he is a very busy man, he is very kind and helpful.

b) I've found a very good price, even though it's a bit high.

a) It's very good, but one of the prices has been cancelled because of a mistake.

a) I'd like to use the solar panel.

b) Have you seen the TV programme about solar panels? And it's very good.

a) And it's necessary.

TASKS

1 Complete the following sentences by choosing a word or phrase from the box.

- not quite as good as before
- there are a lot of of people and cars
- completely collapsed, but it was still used
- it had to be at
- there are a lot of of the country where it doesn't work
- in the past
- as well as

- 1 The members of the jury were **divided** about...
- 2 Although it was a bit old, the car was still being **used**...
- 3 These computers are 100% **as good as** before...
- 4 Mobile phones were **completely collapsed**, however,...
- 5 In a lot of rural areas, people are **not quite as good as**...
- 6 While we were going parallel to the highway,...

2 Complete the following text by using one of the words in the box.

modern – however – but – despite – while

The first road bridge, built by the local council, had been **modern** and would last for many years. **but** **however** it was always subject to some damage, and it was not possible to carry out much work. **but** the local council had been doing research into building the first bridge design. Scotland had been working on bridge design for over 50 years. The first bridge design is made of improved stone. **but** the new stone bridge is better because of progress and concrete. Some bridge designs still containing a design. **but** bridge design is like the first bridge. In Scotland, it is still used to this day.

3 A small company is looking for a new site to build a new factory. The Director is choosing from possible sites. Join the sentences in A and B using the connectors in C to form part of his question. Example: Site 1 is a good site because it is close to the main road.

A	B	C
Site 1 provides a suitable site for a factory.	It is the most expensive.	so
Location is ideal.	It is not too far from the city.	although
It is close to the main road and has an M1 access.	It is the only way to build a large factory.	because
The area is used by local residents for the recreation.	It is the only bank building from the previous year.	however
There is a large labour market.	workers in this area are used to it.	even though
Site 2 is close to road and rail services.	Site 3 is close to the airport.	while
Government finance is available for businesses, though a little less.		as well as
Site 3 is a good site.	Site 3 is a good site for a factory.	because
Site 1 is not expensive.	It is the most expensive.	although
It is a good site for a factory.		because

Answer key

Unit 1

Exercise 1
 put a small amount of water in a glass
 make a hole in the paper
 make a hole in the paper
 make a hole in the paper
 make a hole in the paper
 make a hole in the paper

Exercise 2
 1. paper
 2. water
 3. glass
 4. hole
 5. hole
 6. hole
 7. hole
 8. hole
 9. hole
 10. hole

Exercise 3
 1. paper
 2. water
 3. glass
 4. hole
 5. hole
 6. hole
 7. hole
 8. hole
 9. hole
 10. hole

Unit 2

Exercise 1
 1. 100
 2. 100
 3. 100
 4. 100
 5. 100

Exercise 2
 1. 100
 2. 100
 3. 100
 4. 100
 5. 100
 6. 100
 7. 100
 8. 100
 9. 100
 10. 100

Exercise 3
 1. 100
 2. 100
 3. 100
 4. 100
 5. 100
 6. 100
 7. 100
 8. 100
 9. 100
 10. 100

Unit 3

Exercise 1
 1. 100
 2. 100
 3. 100
 4. 100
 5. 100
 6. 100
 7. 100
 8. 100
 9. 100
 10. 100

Unit 4

Exercise 1
 1. 100
 2. 100
 3. 100
 4. 100
 5. 100
 6. 100
 7. 100
 8. 100
 9. 100
 10. 100

Exercise 2
 1. 100
 2. 100
 3. 100
 4. 100
 5. 100
 6. 100
 7. 100
 8. 100
 9. 100
 10. 100

Unit 5

Exercise 1
 1. 100
 2. 100
 3. 100
 4. 100
 5. 100
 6. 100
 7. 100
 8. 100
 9. 100
 10. 100

Exercise 2
 1. 100
 2. 100
 3. 100
 4. 100
 5. 100
 6. 100
 7. 100
 8. 100
 9. 100
 10. 100

Exercise 3
 1. 100
 2. 100
 3. 100
 4. 100
 5. 100
 6. 100
 7. 100
 8. 100
 9. 100
 10. 100

Unit 6



Exercise 1
 1. 100
 2. 100
 3. 100
 4. 100
 5. 100
 6. 100
 7. 100
 8. 100
 9. 100
 10. 100

Exercise 2
 1. 100
 2. 100
 3. 100
 4. 100
 5. 100
 6. 100
 7. 100
 8. 100
 9. 100
 10. 100

UNIT 5**Exercise 1**

10. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10.

Exercise 2

- | | |
|---------------|-------------|
| 1. American | 2. Japanese |
| 3. Chinese | 4. Indian |
| 5. Australian | 7. Canadian |
| 6. British | 8. German |

Exercise 3

1. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10.

UNIT 7**Exercise 1**

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.

Exercise 2

- | | |
|---------------|----------------|
| 1. 100 | 11. 1000 |
| 2. 1000000000 | 12. 1000000 |
| 3. 1000 | 13. 10000000 |
| 4. 10000 | 14. 100000000 |
| 5. 1000000 | 15. 1000000000 |

Exercise 3

- | | |
|---------------|---------------|
| a. 10000000 | 1. 1000000000 |
| b. 100000000 | 2. 1000000 |
| c. 1000000 | 3. 10000000 |
| d. 10000 | 4. 1000000000 |
| e. 1000000000 | 5. 100000000 |

UNIT 8**Exercise 1**

- | | |
|--------------|----------------|
| 1. 10000 | 6. 1000000 |
| 2. 1000 | 7. 10000000 |
| 3. 1000000 | 8. 10000 |
| 4. 10000000 | 9. 100000000 |
| 5. 100000000 | 10. 1000000000 |

Exercise 2

1. In the first month of the year, the number of people who are employed in the United States is about 150 million. In the second month, the number of people who are employed in the United States is about 150 million. In the third month, the number of people who are employed in the United States is about 150 million. In the fourth month, the number of people who are employed in the United States is about 150 million. In the fifth month, the number of people who are employed in the United States is about 150 million. In the sixth month, the number of people who are employed in the United States is about 150 million. In the seventh month, the number of people who are employed in the United States is about 150 million. In the eighth month, the number of people who are employed in the United States is about 150 million. In the ninth month, the number of people who are employed in the United States is about 150 million. In the tenth month, the number of people who are employed in the United States is about 150 million.

Exercise 3

- | | |
|----------------|----------------|
| 1. 10000000 | 6. 100000000 |
| 2. 1000000000 | 7. 1000000 |
| 3. 100000000 | 8. 1000000000 |
| 4. 10000000 | 9. 10000000000 |
| 5. 10000000000 | 10. 1000000000 |

UNIT 9**Exercise 1**

- | | |
|------------------|-------------------|
| 1. 1000000000 | 7. 1000000 |
| 2. 10000 | 8. 1000000000 |
| 3. 100000000 | 9. 10000000000 |
| 4. 10000000 | 10. 100000000000 |
| 5. 100000000000 | 11. 10000000000 |
| 6. 1000000000000 | 12. 1000000000000 |

Exercise 2

- | | |
|---------------------|-----------------------|
| 1. 1000000000 | 6. 1000000000000 |
| 2. 1000000000000 | 7. 10000000000000 |
| 3. 10000000000000 | 8. 100000000000000 |
| 4. 100000000000000 | 9. 1000000000000000 |
| 5. 1000000000000000 | 10. 10000000000000000 |

Exercise 3

- | | |
|---------------------|-----------------------|
| a. 1000000000 | 6. 1000000000000 |
| b. 1000000000000 | 7. 10000000000000 |
| c. 10000000000000 | 8. 100000000000000 |
| d. 100000000000000 | 9. 1000000000000000 |
| e. 1000000000000000 | 10. 10000000000000000 |

UNIT 10**Exercise 1**

- | | |
|---------------------|-----------------------|
| 1. 1000000000 | 6. 1000000000000 |
| 2. 1000000000000 | 7. 10000000000000 |
| 3. 10000000000000 | 8. 100000000000000 |
| 4. 100000000000000 | 9. 1000000000000000 |
| 5. 1000000000000000 | 10. 10000000000000000 |

Exercise 2

- | | |
|---------------------|-----------------------|
| 1. 1000000000 | 6. 1000000000000 |
| 2. 1000000000000 | 7. 10000000000000 |
| 3. 10000000000000 | 8. 100000000000000 |
| 4. 100000000000000 | 9. 1000000000000000 |
| 5. 1000000000000000 | 10. 10000000000000000 |

UNIT 11**Exercise 1**

- | | |
|---------------------|-----------------------|
| 1. 1000000000 | 6. 1000000000000 |
| 2. 1000000000000 | 7. 10000000000000 |
| 3. 10000000000000 | 8. 100000000000000 |
| 4. 100000000000000 | 9. 1000000000000000 |
| 5. 1000000000000000 | 10. 10000000000000000 |

Question 1

1. *longitudinal*
 2. *transverse*
 3. *vertical*
 4. *horizontal*
 5. *oblique*
6. *change*
 7. *interference*
 8. *diffraction*
 9. *refraction*
 10. *reflection*

Answer 1

- a. *Transverse*
 b. *Snell's*
 c. *change*
 d. *oblique*
 e. *diffraction*
- f. *interference*
 g. *transverse*
 h. *oblique*
 i. *refraction*
 j. *reflection*

Question 2

1. *diffraction*
 2. *interference*
 3. *refraction*
 4. *change*
 5. *oblique*
 6. *transverse*
 7. *Snell's*
 8. *longitudinal*
 9. *vertical*
 10. *horizontal*

Answer 2

1. *diffraction*
 2. *interference*
 3. *refraction*
 4. *change*
 5. *oblique*
 6. *transverse*
 7. *Snell's*
 8. *longitudinal*
 9. *vertical*
 10. *horizontal*

Question 3

- a. *Snell's*
 b. *refraction*
 c. *change*
- d. *interference*
 e. *Snell's*
 f. *refraction*

Question 4

- a. *Snell's*
 b. *refraction*
 c. *change*
 d. *oblique*
 e. *diffraction*
 f. *interference*

Question 5

- a. *Snell's*
 b. *refraction*
 c. *change*
 d. *oblique*
 e. *diffraction*
 f. *interference*
 g. *Snell's*
 h. *refraction*
 i. *change*
 j. *oblique*
 k. *diffraction*
 l. *interference*
1. *Snell's*
 2. *refraction*
 3. *change*
 4. *oblique*
 5. *diffraction*
 6. *interference*
 7. *Snell's*
 8. *refraction*
 9. *change*
 10. *oblique*
 11. *diffraction*
 12. *interference*

Question 6

- a. *Snell's*
 b. *refraction*
 c. *change*
 d. *oblique*
 e. *diffraction*
 f. *interference*
 g. *Snell's*
 h. *refraction*
 i. *change*
 j. *oblique*
 k. *diffraction*
 l. *interference*
1. *Snell's*
 2. *refraction*
 3. *change*
 4. *oblique*
 5. *diffraction*
 6. *interference*
 7. *Snell's*
 8. *refraction*
 9. *change*
 10. *oblique*
 11. *diffraction*
 12. *interference*

Question 7

- a. *Snell's*
 b. *refraction*
 c. *change*
 d. *oblique*
 e. *diffraction*
 f. *interference*
 g. *Snell's*
 h. *refraction*
 i. *change*
 j. *oblique*
 k. *diffraction*
 l. *interference*
1. *Snell's*
 2. *refraction*
 3. *change*
 4. *oblique*
 5. *diffraction*
 6. *interference*
 7. *Snell's*
 8. *refraction*
 9. *change*
 10. *oblique*
 11. *diffraction*
 12. *interference*

Question 8

- a. *Snell's*
 b. *refraction*
 c. *change*
 d. *oblique*
 e. *diffraction*
 f. *interference*
 g. *Snell's*
 h. *refraction*
 i. *change*
 j. *oblique*
 k. *diffraction*
 l. *interference*

Question 9

1. *Snell's*
 2. *refraction*
 3. *change*
 4. *oblique*
 5. *diffraction*
 6. *interference*
 7. *Snell's*
 8. *refraction*
 9. *change*
 10. *oblique*
 11. *diffraction*
 12. *interference*
1. *Snell's*
 2. *refraction*
 3. *change*
 4. *oblique*
 5. *diffraction*
 6. *interference*
 7. *Snell's*
 8. *refraction*
 9. *change*
 10. *oblique*
 11. *diffraction*
 12. *interference*
1. *Snell's*
 2. *refraction*
 3. *change*
 4. *oblique*
 5. *diffraction*
 6. *interference*
 7. *Snell's*
 8. *refraction*
 9. *change*
 10. *oblique*
 11. *diffraction*
 12. *interference*
1. *Snell's*
 2. *refraction*
 3. *change*
 4. *oblique*
 5. *diffraction*
 6. *interference*
 7. *Snell's*
 8. *refraction*
 9. *change*
 10. *oblique*
 11. *diffraction*
 12. *interference*

Question 10

1. *Snell's*
 2. *refraction*
 3. *change*
 4. *oblique*
 5. *diffraction*
 6. *interference*
 7. *Snell's*
 8. *refraction*
 9. *change*
 10. *oblique*
 11. *diffraction*
 12. *interference*
1. *Snell's*
 2. *refraction*
 3. *change*
 4. *oblique*
 5. *diffraction*
 6. *interference*
 7. *Snell's*
 8. *refraction*
 9. *change*
 10. *oblique*
 11. *diffraction*
 12. *interference*
1. *Snell's*
 2. *refraction*
 3. *change*
 4. *oblique*
 5. *diffraction*
 6. *interference*
 7. *Snell's*
 8. *refraction*
 9. *change*
 10. *oblique*
 11. *diffraction*
 12. *interference*
1. *Snell's*
 2. *refraction*
 3. *change*
 4. *oblique*
 5. *diffraction*
 6. *interference*
 7. *Snell's*
 8. *refraction*
 9. *change*
 10. *oblique*
 11. *diffraction*
 12. *interference*

Question 11

- a. *Snell's*
 b. *refraction*
 c. *change*
 d. *oblique*
- e. *Snell's*
 f. *refraction*
 g. *change*
 h. *oblique*

Question 12

1. *Snell's*
 2. *refraction*
 3. *change*
 4. *oblique*
 5. *diffraction*
 6. *interference*
 7. *Snell's*
 8. *refraction*
 9. *change*
 10. *oblique*
 11. *diffraction*
 12. *interference*
1. *Snell's*
 2. *refraction*
 3. *change*
 4. *oblique*
 5. *diffraction*
 6. *interference*
 7. *Snell's*
 8. *refraction*
 9. *change*
 10. *oblique*
 11. *diffraction*
 12. *interference*
1. *Snell's*
 2. *refraction*
 3. *change*
 4. *oblique*
 5. *diffraction*
 6. *interference*
 7. *Snell's*
 8. *refraction*
 9. *change*
 10. *oblique*
 11. *diffraction*
 12. *interference*
1. *Snell's*
 2. *refraction*
 3. *change*
 4. *oblique*
 5. *diffraction*
 6. *interference*
 7. *Snell's*
 8. *refraction*
 9. *change*
 10. *oblique*
 11. *diffraction*
 12. *interference*

Exercise 1

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | X | Q | H | T | A | F | I | S | R | A | F | |
| P | 4 | H | L | O | H | A | M | F | I | A | L | | |
| P | 7 | O | I | A | U | P | A | Y | R | S | T | | |
| P | 7 | X | T | A | Y | M | T | R | K | T | | | |
| P | 4 | H | M | L | A | I | Y | F | A | | | | |
| P | 2 | M | L | R | O | H | C | I | M | F | A | T | |
| P | 1 | X | T | A | T | H | A | V | I | F | A | V | |
| P | 7 | A | L | R | K | M | A | M | V | M | T | A | |
| P | 2 | I | T | O | O | T | A | I | H | I | T | T | |
| P | 7 | T | H | C | H | O | P | A | A | I | P | F | |
| P | 8 | Y | C | Y | R | T | K | M | K | L | S | I | M |
| P | 1 | F | O | T | A | S | O | D | A | H | O | L | M |
| P | 7 | C | I | T | H | A | T | P | H | O | I | V | |
| P | 8 | P | O | I | P | O | A | H | O | L | L | P | O |

Exercise 2

| Letter | Character | Character set |
|--------|-----------|----------------------|
| o | o | Latin 1 (no accents) |
| æ | æ | Latin 2 (no accents) |
| œ | œ | Latin 3 (no accents) |
| ø | ø | Latin 4 (no accents) |
| å | å | Latin 5 (no accents) |
| ä | ä | Latin 6 (no accents) |
| ö | ö | Latin 7 (no accents) |
| ß | ß | Latin 8 (no accents) |

Exercise 3

- a. wide normal font b. double
- b. thin weight c. grey
- c. condensed font d. italicized
- d. normal e. bold

Unit 51

Exercise 1

- 1. a. b. c. d. e.
- 2. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.
- 3. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.
- 4. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.

Exercise 2

- 1. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.
- 2. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.
- 3. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.
- 4. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.

Exercise 3

- a. heavy bold
- b. normal/condensed
- c. normal/condensed
- d. normal/condensed
- e. normal
- f. normal/condensed
- g. italicized
- h. bold
- i. italicized
- j. normal/condensed
- k. normal

Unit 52

Exercise 1

- 1. regular
- 2. normal
- 3. bold
- 4. normal
- 5. bold
- 6. normal
- 7. normal
- 8. normal
- 9. normal
- 10. normal

Exercise 2

1. All letters are open on the top.
2. All letters are closed on the top and bottom.
3. The letters 'p', 'q', 'r', 's', 't', 'u', 'v', 'w', 'x', 'y', 'z' are closed on the bottom.
4. The letters 'p', 'q', 'r', 's', 't', 'u', 'v', 'w', 'x', 'y', 'z' are closed on the bottom.
5. All letters are closed on the bottom.
6. All letters are closed on the bottom.
7. All letters are closed on the bottom.
8. All letters are closed on the bottom.
9. All letters are closed on the bottom.
10. All letters are closed on the bottom.

Exercise 3

- a. regular
- b. bold
- c. normal
- d. italicized
- e. normal
- f. bold
- g. italicized
- h. normal
- i. bold
- j. italicized
- k. normal
- l. bold
- m. italicized
- n. normal
- o. bold
- p. italicized
- q. normal
- r. bold
- s. italicized
- t. normal
- u. bold
- v. italicized
- w. normal
- x. bold
- y. italicized
- z. normal

Unit 53

Exercise 1

- 1. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.

Exercise 2

- 1. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.

Exercise 3

- a. all letters are open
- b. all letters are closed
- c. all letters are closed
- d. all letters are closed
- e. all letters are closed
- f. all letters are closed
- g. all letters are closed
- h. all letters are closed
- i. all letters are closed
- j. all letters are closed
- k. all letters are closed
- l. all letters are closed
- m. all letters are closed
- n. all letters are closed
- o. all letters are closed
- p. all letters are closed
- q. all letters are closed
- r. all letters are closed
- s. all letters are closed
- t. all letters are closed
- u. all letters are closed
- v. all letters are closed
- w. all letters are closed
- x. all letters are closed
- y. all letters are closed
- z. all letters are closed

Unit 54

Exercise 1

- 1. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.

Exercise 2

- 1. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.
- 2. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.
- 3. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.
- 4. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.
- 5. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.
- 6. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.
- 7. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.
- 8. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.
- 9. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.
- 10. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.

Exercise 3

- a. regular
- b. bold
- c. normal
- d. italicized
- e. normal
- f. bold
- g. italicized
- h. normal
- i. bold
- j. italicized
- k. normal
- l. bold
- m. italicized
- n. normal
- o. bold
- p. italicized
- q. normal
- r. bold
- s. italicized
- t. normal
- u. bold
- v. italicized
- w. normal
- x. bold
- y. italicized
- z. normal

Unit 55

Exercise 1

- 1. a. b. c. d. e. f. g. h. i. j. k. l. m. n. o. p. q. r. s. t. u. v. w. x. y. z.

Exercise 2

- 1. regular
- 2. bold
- 3. normal
- 4. italicized
- 5. normal
- 6. bold
- 7. italicized
- 8. normal
- 9. bold
- 10. italicized
- 11. normal
- 12. bold
- 13. italicized
- 14. normal
- 15. bold
- 16. italicized
- 17. normal
- 18. bold
- 19. italicized
- 20. normal
- 21. bold
- 22. italicized
- 23. normal
- 24. bold
- 25. italicized
- 26. normal
- 27. bold
- 28. italicized
- 29. normal
- 30. bold
- 31. italicized
- 32. normal
- 33. bold
- 34. italicized
- 35. normal
- 36. bold
- 37. italicized
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- 41. normal
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- 70. italicized
- 71. normal
- 72. bold
- 73. italicized
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- 84. bold
- 85. italicized
- 86. normal
- 87. bold
- 88. italicized
- 89. normal
- 90. bold
- 91. italicized
- 92. normal
- 93. bold
- 94. italicized
- 95. normal
- 96. bold
- 97. italicized
- 98. normal
- 99. bold
- 100. italicized

and 11.

It is a well-known fact that every product of two integers

is a multiple of 4.

Consequently, if a and b are integers, then $a^2 + b^2$ is a multiple of 4.

Conversely,

if $a^2 + b^2$ is a multiple of 4,

then a and b

are both even or both odd.

Therefore, if a and b are both odd,

then $a^2 + b^2$ is a multiple of 4. Conversely, if a and b are both even, then $a^2 + b^2$ is a multiple of 4.

Consequently, if $a^2 + b^2$ is a multiple of 4,

then a and b are both even or both odd.

and 12.

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Consequently,

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Conversely,

if $a^2 + b^2$ is a multiple of 4,

then a and b are both even or both odd.

Therefore, if a and b are both odd,

then $a^2 + b^2$ is a multiple of 4. Conversely, if a and b are both even,

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Consequently,

if $a^2 + b^2$ is a multiple of 4,

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and 13.

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