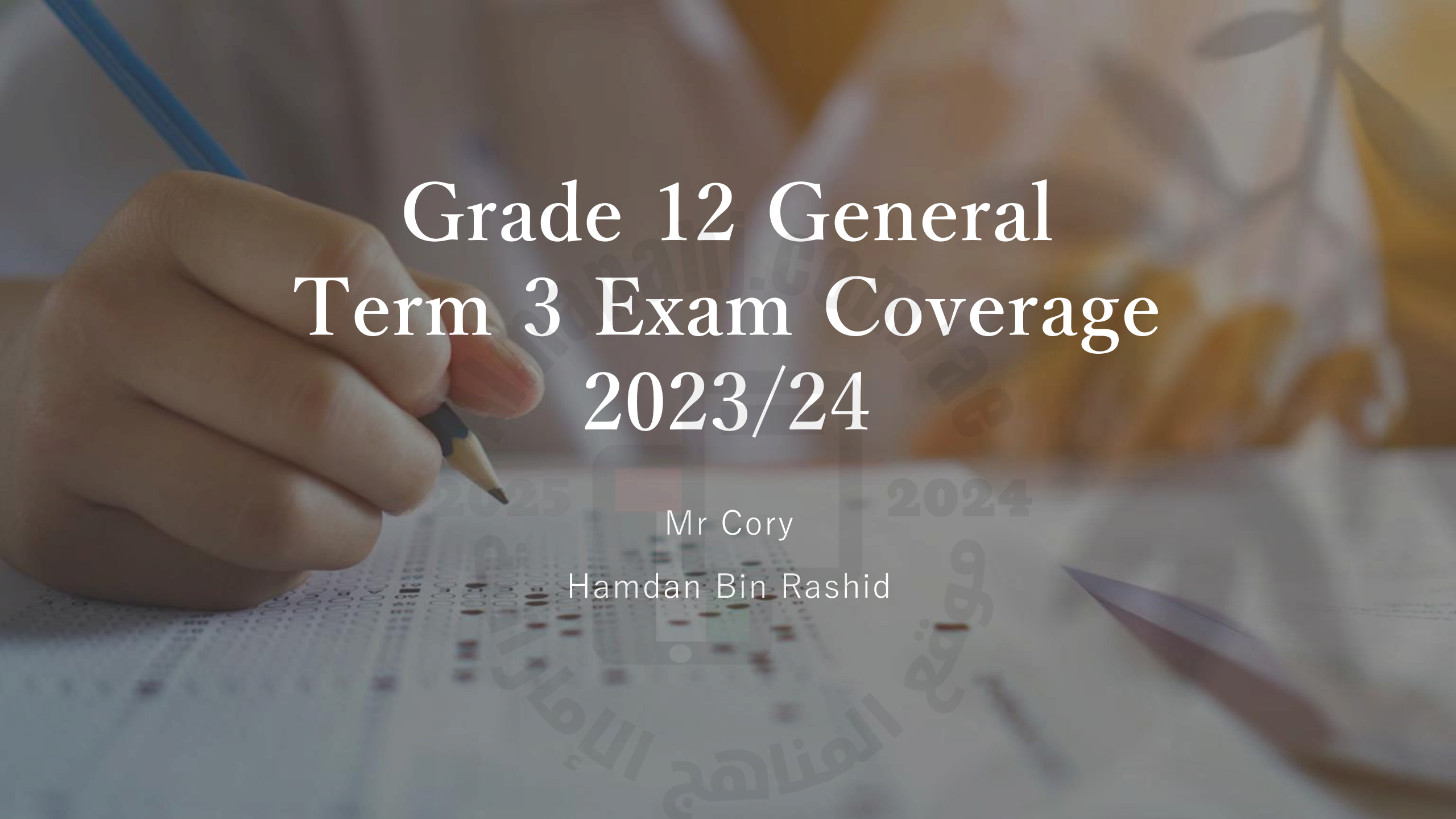
حل أسئلة تدريبية نهاية الفصل وفق المسار العام

تم تحميل هذا الملف من موقع المناهج الإماراتية	
موقع المناهج ⇦ المناهج الإماراتية ⇦ الصف الثاني عشر ⇦ علوم صحية ⇦ الفصل الثالث ⇦ اختبارات ⇦ الملف	
تاريخ إضافة الملف على موقع المناهج: 2025-04-02 09:23:38	
المزيد من مادة علوم صحية:	ملفات ا كتب للمعلم ا كتب للطالب ا اختبارات الكترونية ا اختبارات ا حلول ا عروض بوربوينت ا أوراق عمل منهج انجليزي ا ملخصات وتقارير ا مذكرات وبنوك ا الامتحان النهائي ا للمدرس

التواصل الاجتماعي بحسب الصف الثاني عشر					
صفحة المناهج الإماراتية على فيسبوك					

المزيد من الملفات بحسب الصف الثاني عشر والمادة علوم صحية في الفصل الثالث	
1	حل أسئلة الامتحان النهائي المسار العام
2	حل أوراق عمل الوحدات التاسعة والعاشرة والحادية عشرة
3	حل تدريبات امتحانية نهاية الفصل المسار العام
4	حل مذكرة مراجعة امتحانية وفق الهيكل الوزاري المسار العام
5	حل مراجعة نهائية وفق الهيكل الوزاري المسار المتقدم



Grade 12 General Term 3 Exam Coverage 2023/24

Mr Cory

Hamdan Bin Rashid

HSC.3.9.01.006 Demonstrate an understanding of the history of systems of medicine, medicines, and pharmacy

Pharmacy is the science of collecting, preparing and dispensing drugs.

It is the clinical health science that combines medical science, chemistry and biology.

Pharmacy is the study of drug action and the effects that those drugs have on our body.

In ancient (old) Egypt, India and China, physicians (doctors) started treating sick people using natural plants and herbs.

However, in ancient Egypt a small separation between pharmacy and medicine happened. It was decided that some physicians would visit sick people and other physicians would prepare treatments and wait for sick people to visit them.

Keyword

herbs

a plant or a part of a plant that is used to make medicines

In history, the first time it was discovered that a person was treated using a drug, was in ancient (old) Greece by **Asclepius** and **Hygeia**. It is said that they used a plant to treat a wound (injury). They were considered the masters of medicine, health and hygiene.

During the Islamic Golden age (8th century to the 14th century), the separation between pharmacy and medicine happened. Muslim scientists and physicians had a lot of knowledge in chemistry and botany. This helped them discover different ways of preparing medicines, they also wrote a lot of books, which were later used by scientists in Europe.

HSC.3.9.01.006 Demonstrate an understanding of the history of systems of medicine, medicines, and pharmacy

Al Razi was a Muslim doctor, scientist and philosopher. During the Islamic Golden Age, he was the first to write books based on home treatments. His knowledge helped in the development of pharmacy and the separation of it from medicine.

The knowledge of pharmacy started spreading around the world very quickly by translating the books that were written in Arabic during the Islamic Golden Age.

In the 16th century, a law (rule) was created that didn't allow doctors (physicians) to prepare medicines for their patients. Pharmacists were the only professionals allowed to prepare medicines.

Keyword

pharmacist

a healthcare professional specialised in preparing, using, storing and providing medicine

Nowadays, the responsibility of a pharmacists depends on which type of pharmacy they practice, and if they are specialised in an area of treatment.

Example Question 1:

When did the separation between pharmacy and medicine occur?

a) The Egyptian golden age
b) Ancient Greece
c) The Islamic golden age
d) The 21st Century

Example Question 2:

Which of the following best describes pharmacy?

a) The science of the brain and human behaviour
b) The science of collecting, preparing and dispensing drugs
c) The study of the digestive system
d) The study of human growth and development

HSC.3.9.01.008 Identify the evolving roles of the pharmacists in different disciplines.

There are different types of pharmacy where a pharmacist can work, some of these include:

- Community pharmacist – pharmacists who work in a pharmacy where you would go to buy medicines.
- Clinical pharmacist – pharmacists who work in hospitals with doctors and nurses. They decide and advice which treatment each patient needs to improve.
- Home care pharmacist – pharmacists who are responsible for preparing and sending medication to people who are home as they are very sick or old.
- Research pharmacist – pharmacists who develop new drugs.

Hospital pharmacists can also specialise in different areas, such as oncology (cancer), geriatric (old age), paediatric (infants and children) and psychiatry (mental health disorders).

Example Question 3:

Which medical professional prepares, dispenses and provides guidance on taking medication?

a) Physiotherapist
b) Pharmacist
c) Psychologist
d) Paramdic

Example Question 4:

Which type of pharmacist works in a laboratory developing and creating drugs?

a) Community Pharmacist
b) Home-care Pharmacist
c) Research Pharmacist
d) Clinical Pharmacist.

HSC.3.9.01.001 Define pharmacology, pharmacokinetics, and pharmacodynamics; and discriminate between drugs, medicines, and excipients

Pharmacodynamics

Break it down:

Phar-ma-co-dy-nam-ics

Pharmacodynamics is the study of what the **drug** does to the **body.** The most important points to consider in pharmacodynamics are:

- What does the drug do to the body?
- What receptors are activated?
- What other effects does the drug have?

There are factors that influence pharmacodynamics, these are:

- Patient age
- Disease type
- Pregnancy
- Other drugs in the body

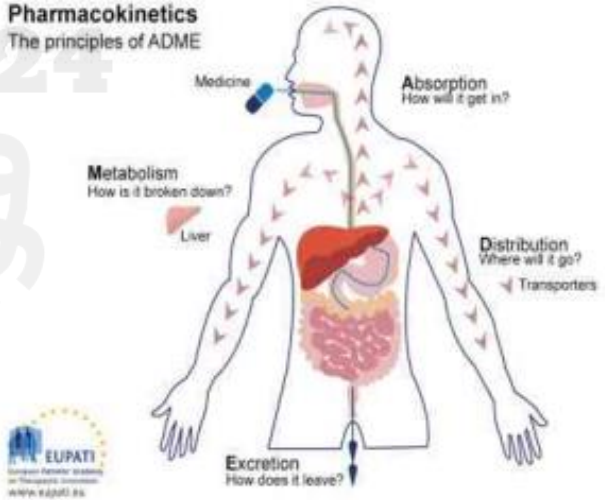
Pharmacokinetics

Break it down:

Phar-ma-co-ki-net-ics

Pharmacokinetics is the study of what the body does to the drug. To understand this, pharmacokinetics has four stages (parts):

- How the medicine gets into the body: **absorption**
- Where the medicine goes in the body: **distribution**
- What the body does to the medicine: **metabolism**
- How the body gets rid of (removes) the medicine: **excretion**



HSC.3.9.01.001 Define pharmacology, pharmacokinetics, and pharmacodynamics; and discriminate between drugs, medicines, and excipients

Further information

Receptors

When a drug enters the body, it starts interacting with receptors. Receptors are the parts of a cell that connect to a substance and cause a chemical reaction in that cell.

There are many types of receptors for different purposes. Cell receptors can be on the outside or the inside of the cell. If they are on the outside, they are known as cell surface receptors. If they are on the inside, they are known as intracellular receptors.

When a drug connects to a receptor, the level of the response differs. There are three different levels of response.

Full agonist

When a drug connects to a receptor and produces a maximum effect

Partial agonist

When a drug connects to a receptor and produces less than a maximum effect

Antagonist

When a drug connects to a receptor, but there is no effect

Drug, medicine and excipient

The words "drug" and "medicine" can be used to describe the same thing, however, in pharmacy these two words have different meanings.

Drugs are chemical substances that are taken from plants, animals, microorganisms or minerals. Drugs are considered ingredients. They are not used directly as a treatment.

Medicines are used directly as a treatment, for example: medicines can treat a pain or cure an infection. Medicines are the result of a drug or drugs being mixed, sometimes with an excipient or without it.

Excipients are used when making medicines. An excipient helps formulating, protecting or supporting a medicine. Excipients make medicines safer for us to use. Most medicines have excipients added to them.

Example Question 5:

Pharmacokinetics describes _____.

a) What the body does to a drug
b) What a drug does to the body
c) Which medicines contain excipients
d) What type of medicine is being used

Example Question 6:

Pharmacodynamics describes _____.

a) What the body does to a drug
b) What a drug does to the body
c) Which medicines contain excipients
d) What type of medicine is being used

Example Question 7:

Most medicines have ____ added to help formulate, protect or support them. These make medicines safer for us to use.

a) Drugs
b) Excipients
c) Metabolites
d) Antagonists

Example Question 8:

Which of the following does not influence pharmacodynamics

a) Patient age
b) Disease type
c) Pregnancy
d) Hair colour

HSC.3.9.01.002 Identify how different dose forms, routes of administration and dose adjustment impact upon the clinical outcome of drug administration.

Oral

This route is the most commonly used. It is where the patient takes medication through the mouth. Drugs taken orally are normally pills or capsules. The pill or capsule is broken apart along the way to the intestines and then dissolved and transported into the bloodstream. Once it is in the bloodstream, it can act on many organs of the body including the brain.

Advantages

- It is the easiest, safest and most cost-effective route.
- Tablets and capsules are very stable drugs. This means they provide a very accurate dose for the patient.
- There are "slow-release" forms available. This means that the drug releases slowly over a period of time, like twelve or twenty-four hours. Patients will only need to take a tablet once or twice a day.

Disadvantages

- The unpredictable absorption of a drug - If there is food in any part of the digestive system, this will change the rate of absorption. Because of this, the drug will not have the expected (wanted) effect.
- Slow absorption - Drugs taken orally are absorbed into the body slower than other routes. It takes a while for the drug to start showing any effects. If an immediate effect was needed, it would be better to use a different route of administration.

Sublingual administration

The drug is placed (put) under the tongue. It will dissolve and absorb into the blood through the tissue under the tongue.

Buccal administration

The drug is placed (put) between the gum and cheek. Here it will be dissolved and absorbed into the blood.

Advantages:

- Lower doses can be given because the drug goes straight into the bloodstream.
- If a patient is unable to swallow tablets, this route is a good alternative.
- If oral tablets cause the patient to suffer from side effects such as nausea, using the sublingual route is an easier alternative (way).

Disadvantages:

- It can be uncomfortable for a patient to hold a small tablet in their mouth for a long time.
- A patient can accidentally swallow the drug. This will take longer to have the desired (wanted) effects. Another dose cannot be given as this can lead to an overdose.
- If the patient eats or drinks while the tablet is in their mouth, it can affect how the drug is absorbed and how well it works

Topical

The drug is administered in the form of a cream or gel applied directly to the area that needs treatment. This is used when the area needed to be treated is easy to reach. It includes areas such as the skin, eyes, ears and nose.

Advantages

- Easy to apply for any age.
- Good if treatment is only needed in the specific area.
- Low risk of side effects and affecting other drugs.

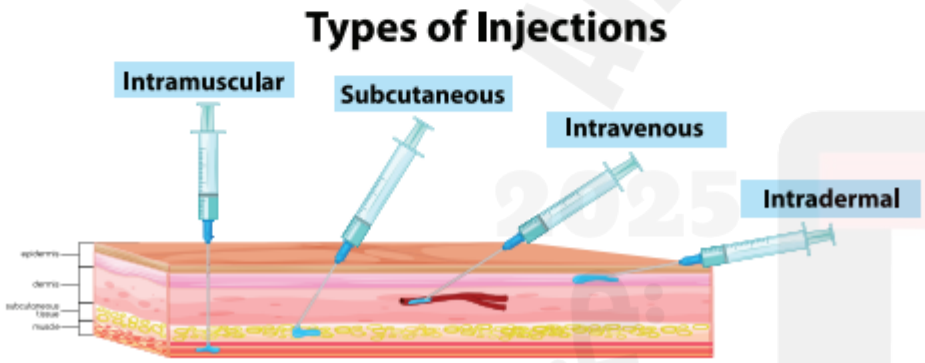
Disadvantages

- Not well absorbed into deeper layers of the skin.
- Absorption can be slow.
- Creams and ointments applied to the skin can stain clothes.

Parenteral

The most common type of parenteral administration is the use of injections. There are four different types of injection, these are:

- Intradermal – the substance is injected into layers of skin, for example, allergy testing
- Intravenous – the drug is injected into the bloodstream through a vein, for example, saline 0.9% infusion
- Subcutaneous – the drug is injected into the fat layer under the skin, for example, insulin
- Intramuscular – the drug is injected into the muscle, for example, vaccines



Advantages

- The drug action is faster, so it is suitable for use in an emergency.
- It is useful in unconscious patients.
- It is suitable when orally administered drugs do not work.

Disadvantages

- They require aseptic (clean) conditions and preparation should be sterile.
- The equipment is expensive.
- The technique can be uncomfortable or painful for the patient.
- Most injections cannot be self-administered as they require a trained medical professional.
- They can be dangerous if administered incorrectly.

The table below shows the time taken for each route of administration to have an effect:

Route of administration	Time until effect
Oral	20 minutes – 1 hour
Sublingual and buccal	3-5 minutes
Topical	Variable (minutes to hours)
Subcutaneous	15-30 minutes
Intravenous	30-60 seconds
intramuscular	10-20 minutes

Routes of administration and forms of medication:

Oral medication	Sublingual and buccal medication	Topical medication	Parenteral medication
Capsules	Small tablets	Creams	Injections
Liquids	Films	Lotions	Infusion
Pastilles	Wafers	Gels	
Powder	Sprays	Ointments	
		Sprays	
		Liquids	

Example Question 9:

Which of the following forms of medicine can be administered using the topical route of administration?

a) Cream
b) Capsules
c) Injections
d) All the answers are correct

Example Question 10:

Which route of drug administration involves the use of injections?

a) Oral
b) Topical
c) Parenteral
d) Sublingual

Example Question 11:

Which of the following routes of administration involve placing the drug under the tongue?

a) Oral
b) Sublingual
c) Buccal
d) Topical

Example Question 12:

What is a disadvantage of the oral route of drug administration?

a) The digestive system can change the rate of absorption and the effect of the medication.
b) The technique requires sterile preparation and aseptic conditions for administration.
c) A trained medical professional is needed to supervise the patient taking the medicine.
d) It can be uncomfortable for a patient to hold a tablet in their mouth for a long time.

HSC.3.9.01.002 Identify the appropriate use of antibiotics.

What are antibiotics?

Break it down:

An-ti-bi-ot-ics

Antibiotics are medicines that destroy or slow the growth of bacteria. They include a range of strong drugs and treat diseases which are caused by bacteria.

Using antibiotics

People usually take antibiotics orally. They can also be administered via an injection or directly applied to the part of the body that is infected.

Most antibiotics begin fighting bacteria within a few hours. It is important to complete the whole course of medication even after symptoms of the infection have improved. This means you should take all of the antibiotics that you have been prescribed by the doctor even if you feel well. By doing this, it reduces the risk that bacteria will become resistant to the antibiotics.

Antibiotic resistance

Keyword

resistance

stopping something from having an effect

Medical professionals believe that people are overusing antibiotics. This overuse is making more bacteria resistant to antibiotics. In other words, the antibiotic becomes useless against the bacteria because the bacteria have improved their defences therefore are not destroyed by the antibiotic.

Antibiotics should only be prescribed to treat conditions:

- that are unlikely to be cured without the use of antibiotics.
- that could spread if not treated.
- where antibiotics can significantly speed up recovery time.
- where the risk of not prescribing antibiotics can lead to more dangerous complications.

Antibiotics can cause the following common side effects:

- diarrhoea
- nausea
- vomiting
- rash
- upset stomach

Less common side effects:

- kidney stones
- blood clotting
- blood disorders
- bowel inflammation

Example Question 13:

Which of the following diseases would you take antibiotics for?

a) Covid-19
b) Influenza
c) Diabetes
d) Tonsilitis

Example Question 14:

Which of the following is a common side effect of using antibiotics?

a) Kidney stones
b) Blood clotting
c) Upset stomach
d) Blood disorders

Example Question 15:

How long will it take for antibiotics to start fighting bacteria after consumption?

a) A few minutes
b) A few hours
c) A few days
d) A few weeks

Example Question 16:

Antibiotics can be used to treat which of the following conditions?

a) bacterial throat infection
b) viral lung infection
c) fungal skin infection
d) all of the options are correct

HSC.3.9.01.007 Interpret basic Latin prescription abbreviations

Common abbreviations used in healthcare:

Measurements	
Abbreviation	**Meaning**
kg	kilogram
g	gram
mg	milligram
mcg	microgram
ml	milliliter
tsp	Teaspoon (5ml)

Routes of administration	
Abbreviation	Meaning
IM	intramuscular
IV	intravenous
PO	by mouth
SC	subcutaneous
SL	sublingual
TOP	topical

Other abbreviations	
Abbreviation	Meaning
Dr.	doctor
XR	X-ray
Dx	diagnosis
Sx	symptom
Tx	treatment
FBC	full blood count
BP	blood pressure

Common Latin abbreviations used in prescriptions:

Prescriptions		
Abbreviation	Latin	**Meaning**
Rx	praescriptus	prescription
ac	ante cibum	before meals
pc	post cibum	after meals
hs	hora somni	at bedtime
prn	pro re nata	as needed
stat	statim	give now
ad	ad libitum	as desired/wanted
bid	bis in die	twice a day
tid	ter in die	three times a day
qid	quarter die sumendus	four times a day

Example 1

Prescription:

"Rx Captopril 25mg, i, SL, STAT, high BP"

Interpretation:

"Prescription: Captopril 25 milligrams, one tablet, sublingual, give now. This medication is being administered because the patient has high blood pressure"

Example Question 17:

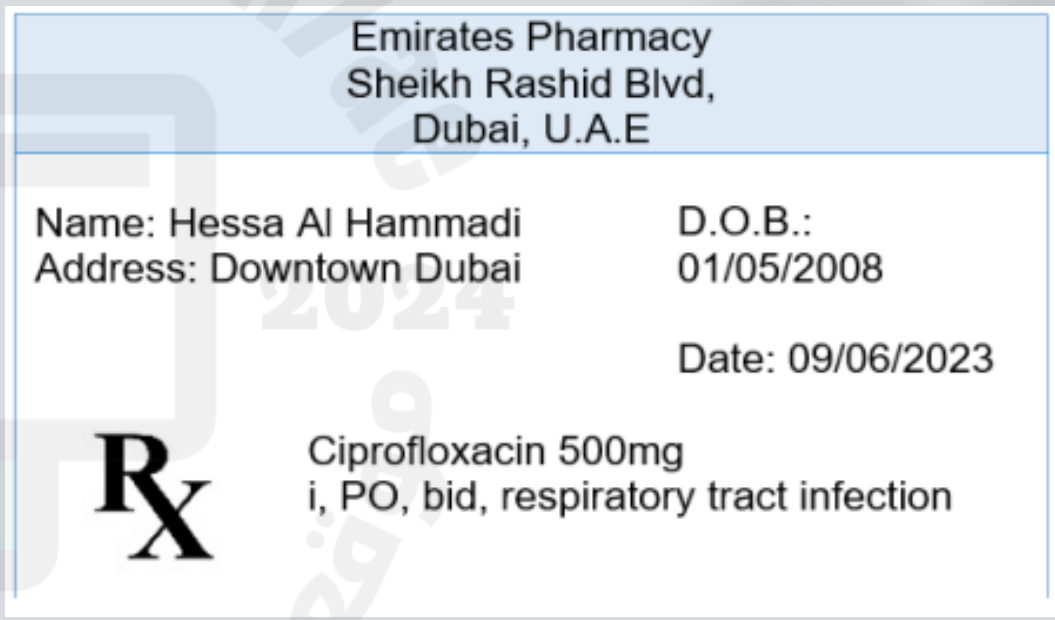
In pharmacy, which Latin abbreviation means ‘after meals’?

a) bid
b) prn
c) pc
d) stat

Example Question 18:

Use the information in the prescription to identify the route of administration for Ciprofloxacin 500mg.

a) Intravenous (parenteral)
b) Topical
c) Buccal
d) Oral (By mouth)


Emirates Pharmacy
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Name: Hessa Al Hammadi
Address: Downtown Dubai

D.O.B.:
01/05/2008

Date: 09/06/2023

Rx

Ciprofloxacin 500mg
i, PO, bid, respiratory tract infection

HSC.3.9.01.004 Demonstrate competence in a broad range of basic, scientific, and pharmaceutical calculations.

Common unit conversions

It is important to be able to convert (change) commonly used units of measurement. Correct unit conversion makes sure the wrong dose of a medication is not given to a patient.

Solids		
1 kg = 1000g	1g = 1000mg	1 mg = 1000mcg
3 kg = 3000g	4 g = 4000mg	2 mg = 2000mcg

Volume	
1000ml = 1L	5000ml = 5L

Time	
60 sec = 1 min	60 min = 1 hour
180 sec = 3 min	120 min = 2 hours

Drug formulas in pharmacy

Calculating drug dosages

Tablet dosage

This is used to calculate how many tablets will be needed to fill a prescription from a doctor. This is also known as the "basic **formula**".

Prescribed dose ÷ stock strength = number of tablets needed

Example

The doctor prescribed 120mg of a drug. The drug is only available in 30mg tablets. How many tablets should be given to the patient?

Answer:

Prescribed dose	Equation	Stock strength	Equals	Tablets to take
120 mg	÷	30 mg	=	4

The doctor prescribed 200mg of a drug. The drug is only available in 40mg tablets. How many tablets should be given to the patient?

Answer

Prescribed dose	Equation	Stock strength	Equals	Tablets to take
200 mg	÷	40 mg	=	5

Mixtures and solution

To calculate the amount of a solution that should be given **to the patient** we can use the following formula.

Desired dose ÷ stock strength x stock volume = amount of solution

Example

The doctor prescribed 120mg paracetamol liquid four times a day. The drug is available in 250mg/5ml. How much liquid is needed per dose?

Answer:

Desired dosage	Equation	Stock strength	Equation	Stock volume	Equals	Amount of solution required
120mg	÷	250mg	X	5ml	=	2.4ml per dose

Calculate IV rate

This calculation is used mainly in a hospital setting. It calculates the rate of administration of IV fluids. This can be calculated over either minutes or hours.

Total IV volume ÷ time (hours or minutes) = ml administrated per hour or minute

Example

The doctor wants to administer a drug intravenously. 120ml of liquid X needs to be administered by IV over a period of six hours. How much liquid is administered per hour?

Answer:

Total IV Volume	Equation	Time (Hours)	Equals	mls administered
120ml	÷	6	=	20ml per hour

Example Question 19:

A patient requires 600 ml of an intravenous (IV) fluid to be administered over a period of 4 hours. Use the formula below to calculate how much liquid is administered per hour.

Total IV volume (ml) ÷ time (hours) = quantity administered per hour (ml)

a) 66.67 ml
b) 150 ml
c) 2400 ml
d) 300 ml

Example Question 20:

There is 5mg of prednisolone in one tablet. The doctor wants the patient to take 40mg once daily at 7am. How many tablets should the patient take at 7am?

Prescribed dose ÷ stock strength = number of tablets needed

a) 2
b) 4
c) 6
d) 8

HSC.3.9.01.009 Demonstrate an understanding of essential communication skills applied to pharmacy.

Written and verbal communication are the two most used methods of communication in healthcare. Communicating effectively can prevent a lot of medical errors, such as drug errors. Therefore, an important part of safety measures is effective communication.

Discussion: Latin abbreviations in the future

What are the most common medical errors that could happen in a hospital because of poor communication?

Pharmacists usually communicate with other healthcare professionals through written and verbal communication. This includes doctors, nurses, other pharmacists and pharmacy technicians. Communication also happens with patients and sometimes their families, mostly regarding prescriptions. Good communication skills help to:

- ensure patient's safety
- avoid drug errors
- deliver better treatment for the patient
- build good relationships with patients.

How can pharmacists ensure patient safety through good communication?

Effective communication skills can improve patient safety. There are many ways to make communication more effective, for example using and remembering the 5 C's of effective communication. The 5 C's involve remembering to be:

1. Clear
2. Cohesive
3. Complete
4. Concise
5. Concrete

1. Clear	2. Cohesive	3. Complete
What exactly do I want to communicate?	Does all the information make sense?	Have I communicated all the information?

4. Concrete	5. Concise
Am I being as specific as possible?	Am I being direct and brief? Or am I using words that are not needed?

Safety measures administering medication

Nurses are mostly involved in the administration of drugs in a hospital. At home, the administration of drugs can be given by a responsible person. There are six rules to follow if you are asked to give drugs to a family member. These rules are known as 'the six rights of drug administration'.

The six rights of drug administration

1. Right drug

The correct drug must be given to the patient. Errors can happen when the pharmacy dispenses the wrong drug. A caregiver can also administer the wrong drug to a patient. This sometimes happens if the drugs have similar names. Always make sure you are using the correct drug every time you administer them.

2. Right patient

Give the drug to the right patient. Errors can happen at the pharmacy when two people have very similar names. At home, there may be many medications for different people kept in the same place. To avoid this, the caregiver should double-check the patient's name and date of birth when collecting and administering the drug.

3. Right dosage

Give the medication at the correct dose as directed by the doctor. If you are not sure, **you** should always check with the patient's doctor or pharmacist.

4. Right route of administration

The medication should only be given by the route it was prescribed for by the doctor. Healthcare professionals, especially nurses, should be aware of the usual route of administration of each drugs. Nurses are responsible of training patients or caregivers how to administer drugs correctly.

5. Right time

The medication should be given at the correct time as prescribed by the doctor. Thirty minutes before or after the prescribed time is acceptable. Be aware that some medication must be taken on an empty stomach and some medication should be taken with food. Healthcare professionals should know this when giving you advice.

6. Right documentation

If a nurse administers medication, they should make a record as soon as possible. This is so another nurse will not double the dose. This is also useful at home. You should record:

- When (what day and time)
- What (medication, dose, route)
- Any side effects

Example Question 21:

Which of the following is **NOT** one of the 5 C's of effective communication?

a) Clear
b) Concise
c) Complicated
d) Complete

Example Question 22:

After administering a drug you should record when, what and if there were any side effects. This is an example of what.

a) Right dose
b) Right drug
c) Right time
d) Right documentation

HS.4.2.01.001 List the causes of foodborne illness

What are foodborne illnesses?

Keyword

foodborne

when something is carried through food

A foodborne illness is an illness that happens because of eating foods that contain disease-causing microorganisms. The most common disease-causing microorganisms found in food are bacteria, but can also include viruses, fungi, parasites, or chemicals.

Most foodborne illnesses happen suddenly and last a short time. They can happen from 6–72 hours after eating contaminated food. Most people recover on their own without treatment. Sometimes, foodborne illnesses may cause more dangerous complications.

Bacteria

Harmful bacteria may already be in foods when you buy them. Raw (not cooked) foods may be contaminated with bacteria that cause foodborne illness. Contamination can happen very easily, it can happen during:

- growth.
- harvesting.
- slaughter (when animals are killed to be eaten).
- processing.
- storage.
- transportation.
- preparation in a kitchen.

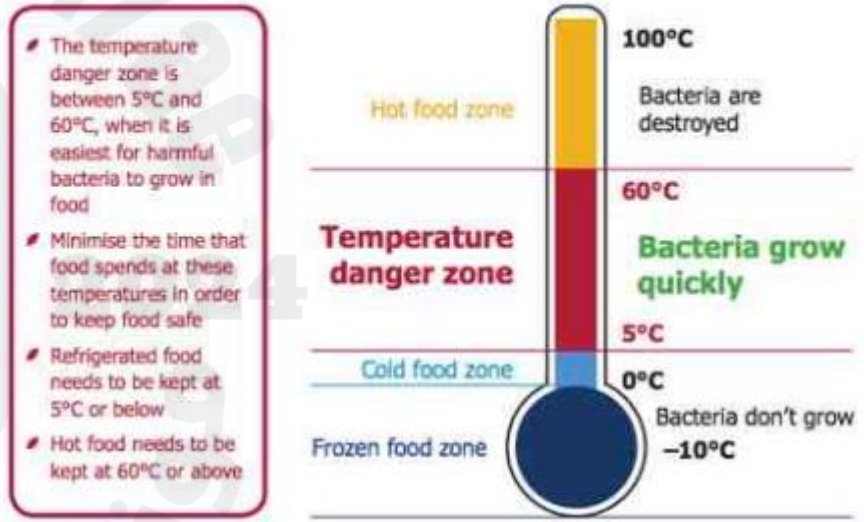
Bacterial growth

Bacteria grow by multiplying and they can do this very quickly. They need certain conditions to grow. These conditions are:

- **Time:** Bacteria double every 15 minutes. This means that within six hours, one bacterium can multiply to over 16 million.

- **Food:** Just like people, bacteria need nutrients to grow. Meat, seafood, cooked rice, cooked pasta, milk, cheese and eggs are all foods that provide very good growing conditions for bacteria.

Warmth: Bacteria need warmth to multiply. The ideal temperature is 37˚C. They can multiply in temperatures between 5˚C and 60˚C.



- **Water:** Bacteria need moisture to grow.

High-risk foods

Some foods are more likely to make you sick than others. This is because these foods are more at risk of bacterial growth. If they are not cooked to a safe temperature, or stored or handled properly, there is a higher chance they will make you sick.

Most foodborne illnesses develop quickly. However, some can take days to develop, so it can be difficult to find the exact cause of the illness. Knowing which foods to be extra careful with when storing, handling and cooking is helpful.

Poultry

Raw and undercooked poultry can be dangerous. Small amounts of bacteria can make people very sick. Cooking to a safe temperature normally kills dangerous bacteria. Avoid washing raw chicken as this will spread the bacteria around the kitchen. Wash and sanitise anything that raw poultry has touched.

Vegetables

Vegetables are a common source of foodborne illness, especially when eaten raw. They can become contaminated at many stages from growth to storage to preparation. Leafy green vegetables are especially dangerous as they are usually eaten raw. It is important to wash vegetables before eating them.

Eggs

Raw and undercooked eggs are also high-risk. Bacteria can live in the yolk (yellow part), the white part of the egg and on the eggshell. Normally the egg will not look, smell or taste any different.

Seafood

From the moment a fish is caught until it is eaten, it must be stored correctly. There are many different bacteria and toxins that can cause foodborne illness from fish. Fish can become contaminated through sewage in the water where they live. Even cooking to at high temperatures cannot kill some of the toxins found in seafood.

Rice

Sometimes bacteria can live in uncooked rice. Cooked rice provides heat, moisture and food which are perfect conditions for bacteria to multiply.

Example Question 23:

Cooking food to ____ C can kill large groups of dangerous bacteria within 30 seconds and ensure it is safe to eat.

a) 37
b) 10
c) 70
d) 50

Example Question 24:

What happens to bacteria in the frozen food zone?

a) bacteria are destroyed
b) bacteria cannot grow
c) bacteria grow quickly
d) bacteria are not affected by temperature changes

HS.4.2.01.002 Explore the concept of cross-contamination.

What is cross-contamination?

Contamination is when food becomes dangerous because it contains harmful or unwanted substance like bacteria. Cross-contamination is how bacteria can spread in food. It happens when bacteria from another object or piece of food, come into contact with 'clean' food. This happens when raw food touches cooked food. Cross-contamination can result in food poisoning.

Food-to-food

This is when contaminated food comes into contact with 'clean' food. Raw, undercooked or unclean food can contain large amounts of bacteria which can spread to other food that comes into contact with it. This can happen if you let raw food touch clean food, or if the the juices (liquid) from raw food drips onto other food, either in the fridge, shopping trolley or while preparing food.

People-to-food

It is easy for humans to transfer bacteria from their body or clothes to food during food preparation. Not washing hands regularly when handling food can cause contamination.

Example

If a person coughs into their hand or touches raw chicken, then touches 'clean' food without washing their hands, it can cause contamination.

Equipment to food

This is one of the most common types of cross-contamination.

Bacteria can live for a long time on surfaces like countertops, cutting boards, utensils (knives and forks), storage containers and factory equipment. Therefore, it is very important to wash all surfaces and equipment properly using soap and hot water.

Example Question 25:

If used correctly, colour coded chopping boards can reduce the risk of cross-contamination during food preparation. What should a green coloured chopping board be used for?

a) raw meat and chicken
b) cooked meats
c) raw, unwashed vegetables
d) washed vegetables and fruit