



UNITED ARAB EMIRATES
MINISTRY OF EDUCATION



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مدرسة رواد الظفرة الخاصة

ROWAD AL DHAFRA PRIVATE SCHOOL

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Health Sciences

You Tube

Health sciences With Ahmed



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Choose the correct

UNIT 9

- 1- Pharmacy is the clinical science that combines and:
 - a- Medical science, chemistry ,physics
 - b- Medical science, chemistry ,biology
 - c- Medical science ,biology , physics
 - d- Biology ,chemistry ,physics
- 2- Pharmacies nowadays use a symbol of bowl and snake ,this symbol came from:
 - a- Ancient Egypt
 - b- Asclepius and Hygeia
 - c- Ancient India
 - d- Ancient China
- 3- In ancient..... small separation between pharmacy and medicine happen :
 - a- Ancient Egypt
 - b- Ancient Greek
 - c- Ancient India
 - d- Ancient China
- 4- A plant or a part of plant that is used to make medicines :
 - a- Herbs
 - b- Solution
 - c- Excipient
 - d- Catalyst
- 5- The separation between pharmacy and medicine happened during :
 - a- Ancient Egypt
 - b- Islamic Golden age
 - c- Ancient India
 - d- Ancient China
- 6-the part of biology that studies everything about plants is :
 - a- Pharmacy
 - b- Medicine
 - c- Botany
 - d- Genetics
- 7-Was a Muslim doctor ,scientist and philosopher ,his knowledge helped in the development of pharmacy and separation from medicine
 - a- Al Razi
 - b- Ibn al -Nafis
 - c- Ibn – al Haitham
- 8- Pharmacist who work in pharmacy is :
 - a- Community pharmacist
 - b- Clinical pharmacist
 - c- Home care pharmacist
 - d- Research pharmacist
- 9- Pharmacist who develop new drugs is :
 - a- Community pharmacist
 - b- Clinical pharmacist

- c- Home care pharmacist
 - e- Research pharmacist
- 10- Pharmacist who work in hospitals with doctors and nurses :
- a- Community pharmacist
 - b- Clinical pharmacist
 - c- Home care pharmacist
 - d- Research pharmacist
- 11- Pharmacist who are responsible for preparing and sending medication to people who are at home as they are very sick or old are :
- a- Community pharmacist
 - b- Clinical pharmacist
 - c- Home care pharmacist
 - e- Research pharmacist
- 12- Hospital pharmacists Can specialise in different areas ,such as :
- a- Oncology
 - b- Geriatric
 - c- Pediatric
 - d- All of the above
- 13- What is the name given to the healthcare professional specialised in preparing, storing and providing medicine?
- a- Pharmacy
 - b- Pharmacology
 - c- Pharmacist
 - e- Physician
- 14- What is the meaning of the prefix 'pharma-' in the word 'pharmacology'?
- a- The study of
 - b- The use of
 - c- Diagnosing
 - f- Drugs
- 15- Which principal of pharmacology is the study of what the drug does to the body?
- a- Pharmacokinetics
 - b- Pharmacodynamics
 - c- Excipients
 - e- Absorption
- 16- is the study of what the body does to the drug :
- a- Pharmacokinetics
 - b- Pharmacodynamics
 - c- Botany
 - d- Genetics
- 17- is the study of what the drug does to the body :
- a- Pharmacokinetics
 - b- Pharmacodynamics
 - c- Botany
 - e- Genetics

18- How the medicine gets into the body is :

- a- Absorption
- b- Distribution
- c- Metabolism
- d- Excretion

19- Where the medicine goes in the body is :

- a- Absorption
- b- Distribution
- c- Metabolism
- e- Excretion

20- What the body does to the medicine is :

- a- Absorption
- b- Distribution
- c- Metabolism
- e- Excretion

21- How the body gets rid of the medicines is:

- a- Absorption
- b- Distribution
- c- Metabolism
- e- Excretion

22- When a drug connects to a receptor and produces a maximum effect this level of response called :

- a- Full agonist
- b- Partial agonist
- c- Antagonist

23- When a drug connects to a receptor ,but there is no effect ,this level of response called

- a- Full agonist
- b- Partial agonist
- c- Antagonist

24- When a drug connects to a receptor and produces less than a maximum effect this level of response called :

- a- Full agonist
- b- Partial agonist
- c- Antagonist

25-are chemical substances that are not used directly as a treatment :

- a- Drugs
- b- Medicines
- c- Excipients

26-Are used directly as a treatment :

- a- Drugs
- b- Medicines
- d- Excipients

27-are used to formulating ,protecting and supporting a medicines :

- a- Drugs

- b- Medicines
 - d- Excipients
- 28- What type of drug is used to treat allergies and reactions to stings?
- a- Painkiller
 - b- NSAID
 - c- Antihistamine
 - e- Antibiotic
- 29- Which drug group does paracetamol belong to?
- A- Painkillers
 - B - NSAIDs
 - c- Antihistamines
 - e- Antibiotics
- 30- Are usually very long and often too difficult to remember or pronounce:
- a- Generic name
 - b- Chemical name
 - c- Brand name
- 31- which is the drug will be commonly known as :
- a- Generic name
 - b- Chemical name
 - d- Brand name
- 32- What is the generic name of Panadol ?
- a- Skelaxin
 - b- Lopressor
 - c- Glucotrol
 - d- Paracetamol
- 33- Is the name developed by the company who create the drug :
- a- Generic name
 - b- Chemical name
 - d- Brand name
- 34- Paracetamol used to treat all the following conditions except :
- a- Fever
 - b- Cold
 - c- Swelling
 - d- Muscles aches
- 35- Blocking histamine receptors can cause the patient to feel :
- a- Tired and drowsy
 - b- Awake
 - c- Alert
 - d- Very active
- 36- is chemical that is released when the body detects something harmful :
- a- Histamine
 - b- Antihistamine
 - c- NSAIDs

- d- Painkiller
- 37- Which route of drug administration involves applying a cream or a gel directly on the area that needs to be treated, for example on the skin?
- a- Sublingual
 - b- Buccal
 - c- Topical
 - e- Oral
- 38- Injections are the most common _____ route of drug administration.
- (A) parenteral
 - (B) oral
 - (C) topical
 - (D) buccal
- 39- Which of the following is an antibiotic?
- (A) Panadol
 - (B) Paracetamol
 - (C) Metformin
 - (D) Penicillin
- 40- Medicines that destroy or slow the growth of disease-causing bacteria are called _____.
- (A) antihistamines
 - (B) paracetamol
 - (C) antibiotics
 - (D) anti-inflammatories
- 41- one of the advantages of the oral route is :
- A- The unpredictable absorption of the drug
 - B- Slow absorption
 - C- There are slow release form available
 - D- Uncomfortable to the patient
- 42- the route of administration that take time 30-60 seconds to show the effect is :
- a- Oral
 - b- Intravenous
 - c- Intramuscular
 - d- Sublingual
- 43- when the drug is placed under the tongue this route called :
- a- Sublingual
 - b- Buccal
 - c- Parenteral
 - d- Topical

44- when the drug is placed between the gum and cheek this route called :

- a- Sublingual
- b- Buccal
- c- Parenteral
- d-Topical

45- one of the disadvantages of the buccal and sublingual is :

- a- It can be uncomfortable for the patient
- b- A patient can accidentally swallow the drug
- c- Eating or drinking can affects the rate of absorption and the effect of the drug
- d- All of the above

46- The drug is injected into layers of the skin e.g. . vaccines :

- a- Intradermal
- b- Intravenous
- c- Subcutaneous
- d- Intramuscular

47- the drug is injected into the blood stream through a vein :

- a- Intradermal
- b- Intravenous
- c- Subcutaneous
- d- Intramuscular

48- the drug is injected into the fat layer under the skin :

- a- Intradermal
- b- Intravenous
- c- Subcutaneous
- d- Intramuscular

49-.....the drug is injected into the muscles :

- a- Intradermal
- b- Intravenous
- c- Subcutaneous
- d- Intramuscular

50- oral medications include all of the following except :

- a- Capsules
- b- Small tablets
- c- Liquids
- d- Pastilles

51- the importance of completing the whole course of antibiotic is to :

- a- Reduce the risk of antibiotic resistance.
- b- Increase the risk of antibiotic resistance.
- c- Give the time to bacteria to make mutations

52- one of the following side effects is less common :

- a- Nausea
- b- Kidney stone
- c- Rash
- d- Vomiting

53- the abbreviation tsp means :

- a- Kilogram
- b- Teaspoon
- c- Microgram
- d- Gram

54- the abbreviation prn means :

- a- Before meals
- b- Twice a day
- c- As needed
- d- After meals

55- the abbreviation SL means:

- a- sublingual
- b- topical
- c- subcutaneous
- d- intramuscular

56- What abbreviation is used to identify the intravenous route of drug administration?

- a- IV
- b- IM

c- EV

d- IS

57- In pharmacy, the abbreviation Rx means_____.

a- before meals

b- twice a day

c- by mouth

d- prescription

58- Jasim experienced slight stomach cramps and nausea after taking antibiotics.

What name is given to this effect after taking medication?

a- Causing effects

b- Side effects

c- Indigestion

d- Antibiotic resistance

59- Which of the following is a safe way to store medication?

a- Keep medicines in places that are easy to reach by children

b- Throw away any extra information leaflets that come in the medicine packet

c- Close medicine caps loosely, or leave them open if possible

d- Check the best before dates on medicine

Answer the following questions :

1- Calculate the IV rate based on the following formula.

Total IV Volume ÷ Time (hours) = ml administered per hour

90ml of fluid to be administered over a period of 3 hours. How much fluid should be administered per hour?

- 2- Calculate the number of tablets needed for the following prescription based on the formula given.

Prescribed dose \div Stock strength = Number of tablets needed

Dr Shaima prescribed a 50mg dose of a drug that comes in a stock strength of 25mg. How many tablets should be given to the patient?

- 3- Calculate the amount of the solution that should be given to the patient using the following formula.

Desired dose \div Stock strength \times Stock volume = Amount of solution needed

Dr Latifa prescribed a 150mg dose of paracetamol solution. The solution is available in 250mg/5ml. How much liquid is needed per dose?

- 4- Calculate the number of tablets needed for the following prescription based on the formula given.

Prescribed dose \div Stock strength = Number of tablets needed

Dr Noor prescribed a 200mg dose of a drug that comes in a stock strength of 100mg. How many tablets should be given to the patient?

- 5- Calculate the number of tablets needed for the following prescription based on the formula given.

Prescribed dose ÷ Stock strength = Number of tablets needed

Dr Khalfan prescribed a 50mg dose of a drug that comes in a stock strength of 10mg. How many tablets should be given to the patient?

- 6- Read the following descriptions of types of pharmacy and decide which type of pharmacy it describes.

These pharmacists develop new drugs.

These pharmacists work in a pharmacy where you would go to buy medicines.

These pharmacists work in hospitals with doctors and nurses.

These pharmacists are responsible for preparing and sending medication to people who are at home.

- 7- There are four stages of pharmacokinetics. In the spaces below, write the name of each stage and explain what it means.

Stage of pharmacokinetics	Definition



Activity 5

Pharmacodynamics

Explain the meaning of pharmacodynamics.

.....

.....

What factors affect the pharmacodynamics of a drug?

.....

.....

.....

9.2 Pharmacology



Activity 6

Pharmacokinetics or pharmacodynamics

Look at the statements in the table below. Decide whether they are describing pharmacokinetics or pharmacodynamics.

Statement	Pharmacokinetics	Pharmacodynamics
Metabolism is what the body does to a drug.		
This is the study of what happens to drugs once they enter the body.		
Certain receptors are activated depending on the drug.		
This is the study of the effect that drugs have on the body.		



Activity 7

Response levels

Fill in the blanks below to identify the name of the response or explain the meaning of the response when a drug connects to a receptor.

- - When a drug connects to a receptor and produces less than a maximum effect.
- - When a drug connects to a receptor but there is no effect.
- Full agonist.....



Activity 8

Drug, medicine or excipient

Look at the sentences in the table below. Which one does the sentence describe best, a drug, a medicine or an excipient?

Sentence	Drug	medicine	excipient
Can be directly used as a treatment.			
Helps formulate, protect and support a medicine.			
Can directly treat a pain or cure an infection.			
Chemical substances that are taken from plants, animals, microorganisms or minerals.			
Most medicines contain them in order to be safer for us to use.			
Are considered ingredients and are not used directly as a treatment.			
Are the result of a drug or drugs being mixed.			



Activity 20

Abbreviations

Complete the table of abbreviations below.

Abbreviation	Meaning
IV	
PO	
TOP	
ml	
tsp	
mg	
ml	



Activity 23

Calculating tablets

Calculate the correct number of tablets in the following scenarios. Remember, the 'No. of tablets' section is for one dose only.

Scenario 1

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?

Desired dose	Equation	Stock strength	Equals	No. of tablets
	÷		=	

Scenario 2

The doctor has prescribed 400mg of Ibuprofen three times a day for a patient. The tablets come in 200mg tablets. How many tablets need to be dispensed per day?

Desired dose	Equation	Stock strength	Equals	No. of tablets
	÷		=	

Tablets per day = _____

Scenario 3

There is 250mg of penicillin in one tablet. The doctor wants the patient to take 500mg twice daily. How many tablets should the patient take in the morning?

Desired dose	Equation	Stock strength	Equals	No. of tablets
	÷		=	

STARTER**Keyword matching**

Match the keyword to the correct description.

Chemical

A condition where part of the body becomes red, swollen and painful.

Prescription

Relating to chemistry; any substance consisting of matter.

Inflammation

A change in the body that indicates a disease is present.

Symptoms

A written message from a doctor that officially tells someone to use medicine.

M.R/ AHMED ABD ELHAMID



Activity 24

Calculating mixtures and solutions

Look at the scenarios below. Use the calculation tables to calculate the amount of solution needed.

Scenario 1

A child has a temperature of 39.0°C. The doctor has ordered a 500mg paracetamol suspension, four times a day. Paracetamol suspension comes in 250mg/5ml. How much paracetamol suspension needs to be dispensed per day?

Desired dosage	Equation	Stock strength	Equation	Stock volume (ml)	Equals	Amount of solution required (ml)
	÷		X		=	

Total per day = _____

Scenario 2

The doctor has ordered a 250mg paracetamol suspension, two times a day. Paracetamol suspension comes in 250mg/5ml. How much paracetamol suspension needs to be dispensed per day?

Desired dosage	Equation	Stock strength	Equation	Stock volume (ml)	Equals	Amount of solution required (ml)
	÷		X		=	

Total per day = _____



Activity 25

Calculating IV rate

Calculate the correct IV rates in the following scenarios.

The 'total IV volume' section should be entered in ml. You may need to do unit conversion.

Scenario 1

The doctor has prescribed 300ml of normal saline solution over six hours. What is the rate in ml per hour?

Total IV volume (ml)	Equation	Time (Hours)	Equals	ml administered
	÷		=	

Scenario 2

A patient needs to be given two litres of saline over 16 hours. What is the rate in ml per hour?

Total IV volume (ml)	Equation	Time (Hours)	Equals	ml administered
	÷		=	

Scenario 3

A patient needs to be given 50ml of saline over 90 minutes. What is the rate in ml per hour?

Total IV volume (ml)	Equation	Time (Hours)	Equals	ml administered
	÷		=	



Activity 27

Matching

Match 'the six rights of drug administration' to the correct description.

Right drug

The caregiver should double-check the patient's name and DOB on the label.

Right patient

The medication should only be given by the route it was prescribed.

Right dosage

Administer the exact amount directed by the doctor.

Right route of administration

Thirty minutes before or after is acceptable.

Right time

When you give medication, you should make a record.

Right documentation

Errors can happen if the two drugs have a similar name.

UNIT 10

Choose the correct answer:

- 1- A _____ is an illness that happens as a result of eating foods that contain disease-causing organisms.
 - a- dizziness.
 - b- foodborne illness
 - c- heartburn
 - d- contamination
- 2- _____ and _____ be signs and symptoms of a foodborne illness.
 - a- swollen glands
 - b- vomiting
 - c- no headaches
 - d- diarrhoea
- 3- Foodborne illnesses can occur _____ after eating contaminated food.
 - a- 2-4 hours
 - b- 6-72 hours
 - c- After 72 hours
 - d- Straightaway
- 4- Choose the two correct answers:
Two conditions that bacteria needs in order to grow are:

- a- Time
 - b- no food
 - c- Warmth
 - d- Cold
- 5- _____describes when food becomes dangerous because a harmful or unwanted substance gets into it, such as bacteria.
- a- Temperature
 - b- Contamination
 - c- Cooking
 - d- Bacterial
- 6- Bacteria can multiply between temperatures of _____degrees Celsius.
- a- between 0 and 5 degrees Celsius
 - b- Above 100 degrees Celsius
 - c- below 0 degrees Celsius
 - d- between 5 degrees and 60 degrees Celsius
- 7- Two examples of high-risk foods that can cause foodborne illness are _____and _____.
- a- beef
 - b- poultry
 - c- beans
 - d- rice
- 8- Tick / circle below one of the main types of cross-contamination of foods.
- a- People to food
 - b- Contamination
 - c- Cross over
 - d- Thoroughly cooked food
- 9- This type of cross contamination is the process of adding contaminated food to non-contaminated food _____
- a- Bacteria to bacteria
 - b- Food to food
 - c- Equipment to food.
 - d- People to food
- 10- The first key to safer food is to Keep Clean. An example of what you can do to stay to clean is _____
- a- not wash your hands
 - b- not sanitise your cutting boards and equipment after use
 - c- protecting your food from pests
 - d- use dirty equipment when cooking

11- An example of when you should wash your hands to keep clean is _____

- a- before blowing your nose.
- b- before handling food.
- c- before handling rubbish.
- d- not wash your hands at all.

12- A food _____ is when the body's immune system responds unusually to certain foods :

- a- allergy
- b- poisoning
- c- intolerance
- d- reaction

13- A severe food allergic reaction is known as _____

- a- contamination
- b- anaphylaxis
- c- food intolerance
- d- allergen

14- Foods that commonly cause allergies are called _____

- a- anaphylaxis
- b- allergen
- c- poison
- d- food

15- _____ is a common type of food intolerance.

- a- rice
- b- pasta
- c- fruits and vegetables
- d- lactose

16- Two signs and symptoms of food allergies are _____ and _____.

- a- chest pains
- b- swollen tongue
- c- trouble breathing
- d- swollen feet

17- Select the correct two examples.

Give two examples of foods that can commonly cause an allergic reaction:

- a- fruits and vegetables
- b- peanuts
- c- potatoes
- d- eggs

18- _____ is when something is carried through food; usually a disease

- a- illness

- b- Foodborne
- c- disease
- d- virus

19- The ideal temperature for Bacteria to multiply is _____

- a- 36°C
- b- 39°C
- c- between 5°C to 60°C
- d- 37°C

20- The cold food zone is _____

- a- Between 0°C to 5°C
- b- Between 0°C to -10°C
- c- Between 60°C to 100°C
- d- Between 5°C to 60°C

21- Separating raw and prepared foods will _____ of bacteria between foods. This process can make people very ill.

- a- Increase
- b- Stop the transfer
- c- Decrease
- d- Multiplying

22- The frozen food zone is between 0°C to -10°C

- a- True
- b- False

23- Warmth is one of the certain conditions for bacteria to grow

- a- True
- b- False

24- Leftover food should not be reheated more than Twice.

- a- True
- b- False

25- Bacteria need certain conditions to grow, these include temperature

- a- True
- b- False

26- Food-borne illness is an infection or irritation of the gastrointestinal tract. It is caused by food or drinks that contain harmful bacteria, parasites, viruses, or chemicals.

- a- True
- b- False

27- Hands transfer germs from one place to another, so handwashing is very important. You should wash your hands:

- a- Before handling food.
- b- Before eating.
- c- After going to the toilet
- d- All of the above

28- Leftover food should not be stored in the fridge for more than _____ days

- a- One
 - b- Two
 - c- Three
 - d- Four
- 29- One of the following types is NOT a type of bacteria that lead to foodborne illness.
- a- Salmonella
 - b- Campylobacter
 - c- Clostridium botulinum
 - c- E. Coli
- 30- Bacteria need certain conditions to grow, these include: (choose three)
- a- Air
 - b- Time
 - c- Warmth
 - d- Temperature
 - e- Water
- 31- What is the ideal temperature zone for bacteria to grow?
- a- 100°C and above
 - b- 5°C – 60°C
 - c- 0°C – 3 °C
 - d- -10°C – 0°C
- 32- How can you protect food from pests?
- a- Sanitise cutting boards before use
 - b- Use a thermometer to check the temperature
 - c- Store food in closed containers
 - d- Store raw meat above cooked foods
- 33- _____ are when the body's immune system reacts to certain foods and tries to fight against it.
- a- Foodborne illnesses
 - b- Food allergies
 - c- Food intolerances
 - d- Danger zones
- 34- Which of the following is an example of good food safety?
- a- Using the same plate for raw and cooked foods
 - b- Washing hands after handling raw meat or poultry
 - c- Cooking food until it reaches 50°C
 - d- Cooling hot food on the counter overnight
- 35- What is a lactose intolerance?
- a- A digestive reaction after eating dairy products
 - b- A digestive reaction after eating wheat or barley
 - c- A digestive reaction after eating soy
 - d- A digestive reaction after eating caffeine
- 36- Separating raw and prepared food will prevent cross-contamination.
- a- True
 - b-False



Activity 1

Disease-causing microorganisms

In the space below, list the five disease-causing microorganisms that can be found in food.

1.
2.
3.
4.
5.

From the list above, which microorganism is the most common cause of disease?

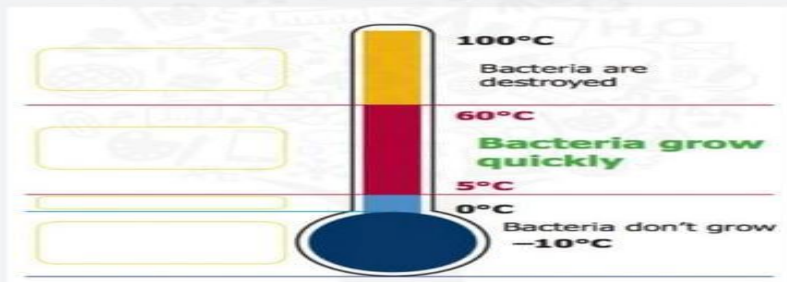
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Activity 4

Temperature zones

Label each of the temperature zones correctly.



Activity 5

Bacteria leading to illness

Write the name of the four types of bacteria that lead to foodborne illness.

Can you remember what food items are used with each colour of chopping board? Label each of the colours below with the correct food items.

Prevent cross-contamination

Use the correct coded chopping board and knives

3. Match each of the five keys to safer food with their correct description.

Keep clean.
Separate raw and cooked food.
Cook thoroughly.
Keep food at safe temperatures.
Use safe water and raw materials.

Store food in containers to avoid contact between raw and cooked foods.
Use clean water to cook and clean with.
Allow food to defrost in the fridge.
Wash your hands before handling food and during preparation.
For meat and poultry, make sure the juices are clear and not pink.

Fill in the blanks:

Food intolerances can be hard to _____. This is because the _____ that people experience are similar to those of many other conditions. The best way to diagnose food intolerance is to _____ symptoms alongside foods that are eaten. _____ suspected foods from the diet is also a good method.

a. symptoms b. monitor c. diagnose d. removing

10.4 Food allergies and intolerances



Activity 26

Anaphylaxis



Read the following sentences about anaphylaxis. Fill in the blanks in each sentence using one of the words in brackets at the end of the line.

Anaphylaxis is a allergic reaction. (mild/severe)

Anyone experiencing anaphylaxis should get medical attention. (immediate/gradual)

Symptoms of anaphylaxis include problems with breathing, skin rashes, nausea and an increased rate. (heart/thinking)

If a person goes into shock, they should be treated with a/an (tablet/injection)

The injection containing comes in the form of an auto-injector. (paracetamol/adrenaline)

People with severe allergies should carry an adrenaline auto-injector with them. (always/never)

Unit 11

Choose the correct answer:

- 1- Which of the following is not a therapeutic diet?
 - a- Nutrient modification
 - b- Texture modification
 - c- Food allergy modification
 - e- Physical activity modification
- 2- What nutrients do you need to lower your intake of if you have renal disease?
 - a- Protein, fats, sugar
 - b- Protein, calcium, phosphorus
 - c- Protein, potassium, fats
 - e- Protein, potassium, phosphorus
- 3- Which one is not a benefit of a healthy diet?
 - a- To help maintain a healthy weight
 - b- To help prevent certain diseases
 - c- To control cholesterol levels
 - d- To increase stress levels
- 4- Which of the following best describes nutrient modification ?
 - a- When one or multiple nutrients are added or removed from personal's diet
 - b- When the food is delivered into the body through a tube
 - c- When a person eats solid food once a day
 - d- When the texture and consistency of food is changed
- 5- What is the purpose of a therapeutic diet ?
 - a- To increase a person's quality of life and life expectancy
 - b- To fit the nutritional needs of a patient based on their individual health status
 - c- To help reduce the amount of medication the patient is required to take
 - d- All of the above
- 6- Which medical term is used to describe patients who have problems swallowing food :
 - a- Food intolerance
 - b- Dysphagia
 - c- Ulcer
 - d- Puree
- 7- Why would some one need a therapeutic diet ?
 - a- To correct nutritional status
 - b- To help digestion
 - c- To provide texture modifications
 - d- All of the above
- 8- A patient with negative energy balance will :
 - a- Gain weight
 - b- Lose weight
 - c- Stay the same
 - d- None of the above

- b- some conditions
- a- Allergy modifications

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