Review for Final Exam IDC 4WO
Unit 1: Introduction to Emergency Services

Terms:

emergency	Universal Precautions	scene size-up
tiered response	pathogen	post- traumatic stress syndrome
community-based policing	PPE	

Questions:

1. Complete the following chart to summarize the dangers and duties of the three emergency services.

	police	**fire**	**ambulance**
Most common type of call			
Most common cause of work-related death			
Do they need to know first aid?			
Can they legally administer medication?			
Can they refuse to respond to an emergency because of: **a) slippery road conditions**			
b) violent people at the scene			
c) their vehicle is not safe to drive			
If a person is violent, what should they do?			

2. What happens if a 911 call comes in, but no one speaks?

3. What is meant by proactive, community-based policing?

4. What is the **purpose** of Universal precautions?

a) Give examples of five Universal precautions.

b) Is wearing a fire helmet a universal precaution? Explain.

5. With which of the following age groups should universal precautions be used?
   - infants and children under 2 years of age _____
   - children between the ages of 2 – 12 years _____
   - people between the ages of 12 – 30 years _____
   - people between the ages of 20 – 50 years _____
   - senior citizens _____

6. Why are emergency services personnel at high risk for post-traumatic stress syndrome? Suggest three things that people can do to treat, or cope with, post-traumatic stress syndrome.

Unit 2: Medical Emergencies

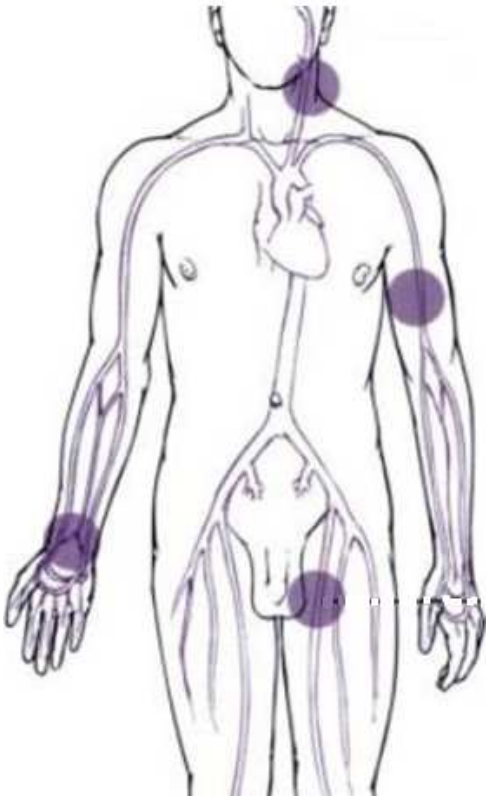
Multiple Choice from Review online: 1 – 6, 8, 10, 11, 13 – 16, 22, 31, 34, 35, 37 – 59, 61, 62, 68, 69, 73, 79, 80, 82 - 90

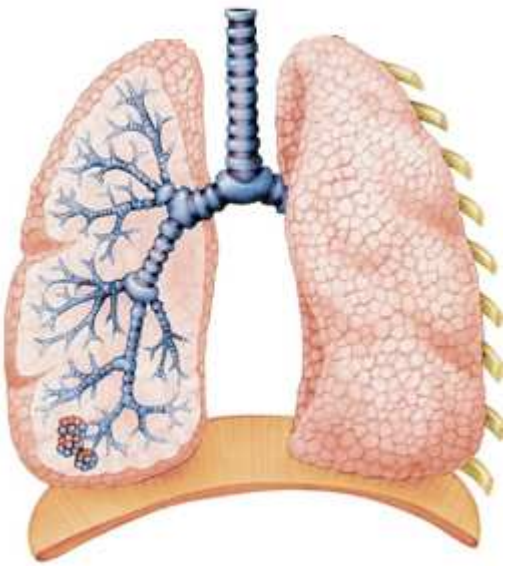
Terms:

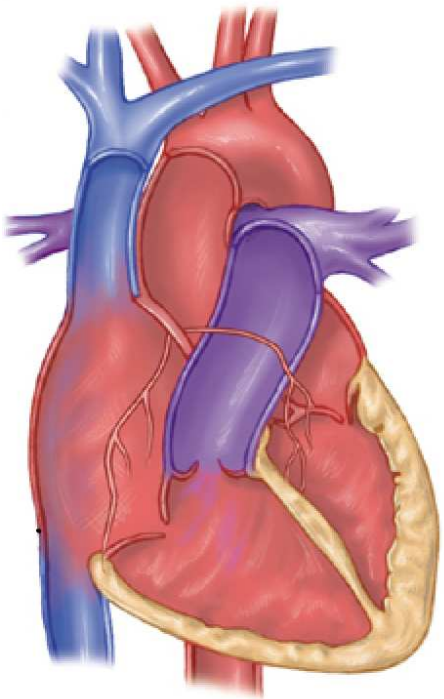
tidal volume	systolic blood pressure	stent
vital capacity	diastolic blood pressure	chronic disease
asphyxiation (aspiration)	asthma	anaphylaxis
gas exchange	emphysema	epi-pen
electrocardiogram (ECG)	COPD	coronary bypass
arrhythmia	hypertension	heart attack (myocardial infarction)
ventricular fibrillation	shock (hypoperfusion)	defibrillator
tachycardia	atherosclerosis	hypoxia and ischemia
bradycardia	plaque	stroke (cerebrovascular accident, CVA)
systole	angina	FAST
diastole	coronary artery disease	tPA

Structures: Label the following structures on the diagrams below. You may be able to label a structure on more than one diagram. Know the **function** of each part.

trachea	left atrium	SA node
bronchi	left ventricle	pulmonary artery
bronchiole	aorta	pulmonary vein
alveoli	tricuspid valve	carotid artery and its pulse point
diaphragm	bicuspid (mitral) valve	brachial artery and its pulse point
right atrium	coronary artery	radial artery and its pulse point
right ventricle	vena cava	femoral artery and its pulse point







Questions:

1. Complete the following chart for common medical emergencies:

Disease or Condition	What is Wrong? (what caused the problem?)	Signs and Symptoms	First Aid, Drugs or Procedures used for Treatment
asphyxiation in a conscious patient			
asthma			
anaphylaxis			
emphysema			
shock (hypoperfusion)			
ventricular tachycardia			
angina			
myocardial infarction			
ischemic stroke (cerebrovascular accident or CVA)			

2. Who can legally administer the following?

Medication	Fire	Police	Ambulance	Teachers
epi-pens				
puffers				

3. What is the epiglottis? What is its function?

4. What is a chronic disease? Give three examples of chronic diseases.

5. What is the single most important thing that emergency personnel can do to prevent the transmission of pathogens?

6. What are the five Rs that must be checked before administering or assisting with medication?

7. What are the average normal, resting values for the following:
   a) Number of breaths per minute: _____
   b) Tidal volume: _____
   c) Vital capacity (maximum air exchanged in one breath): _____
   d) Systolic blood pressure _____
   e) Diastolic blood pressure _____
   f) Resting heart rate _____
   g) Blood sugar _____

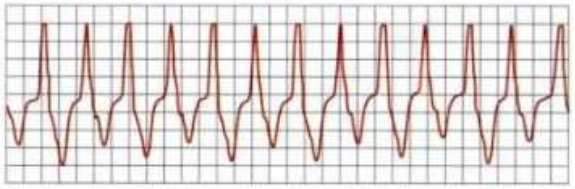
8. Describe the steps that take place during one complete breath (breathing in and out).

9. Describe the flow of blood through the heart and body for one cardiac cycle, including the four chambers of the heart and major blood vessels.

10. Explain three things that happen during an asthma attack that makes breathing difficult.

11. You come across a person in a public washroom who is choking. The person is coughing forcefully. Describe exactly what you should do.

12. What type of arrhythmia is shown in the ECG?
    a) Can this arrhythmia be treated with defibrillation?
    b) Which arrhythmias can be treated with a defibrillator?
    c) What does a defibrillator do?



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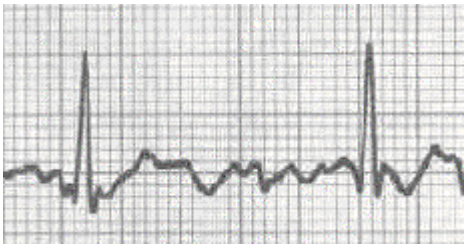


14. What happens when a person goes into shock?
    a) Why is this dangerous?
    b) List three situations that may cause shock.

Unit 3: Behavioural Emergencies

Multiple Choice from Review online: 1 – 8, 12, 14, 16 – 28, 31 – 41, 47, 48, 54 – 56, 58 – 60, 63, 64, 67, 68 – 74, 76 – 78, 82 – 85, 89, 90

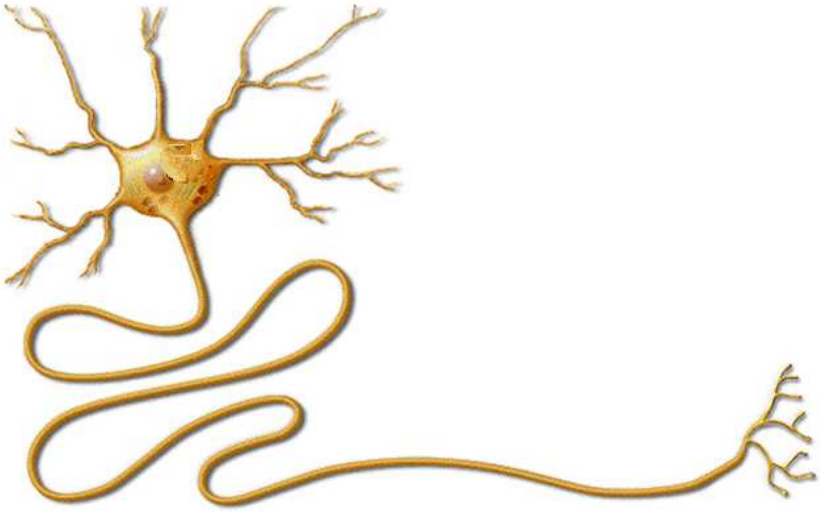
Terms:

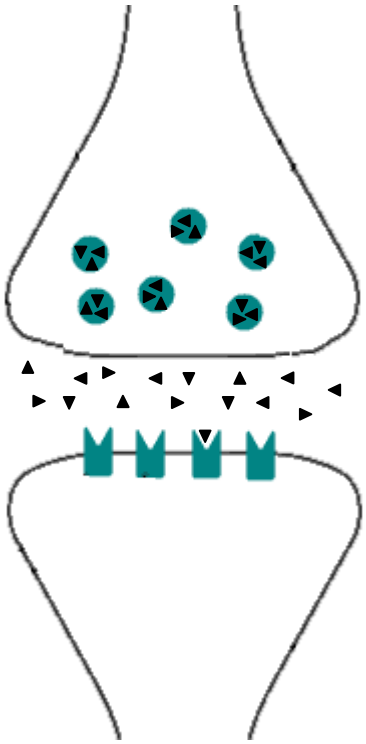
central nervous system	insulin	methadone
sympathetic nervous system	seizure	hypoxia
neuron	epilepsy	mental illness
myelin	absence seizures	serotonin
neurotransmitters	tonic-clonic seizures	dopamine
synapse	status epilepticus	schizophrenia
pre-synaptic neuron	psychoactive substances	depression
post synaptic neuron	reward (pleasure) centre	mania (manic)
Type I diabetes	addiction	bipolar disorder
Type II diabetes	tolerance	obsessive compulsive disorder
hyperglycemia	dependence	hallucination and delusions
hypoglycemia	withdrawal	endorphins

Structures: Label the following structures on the diagrams below. You may be able to label a structure on more than one diagram. Know the **function** of each part.

neuron	cell body	vesicle
axon	nucleus	neurotransmitter
dendrite	pre-synaptic neuron	synapse
terminal button	post-synaptic neuron	receptor

Type of cell: _____





On the diagram above, draw in myelin.

Questions:

1. Complete the following chart for common behavioural emergencies:

Disease or Condition	What is Wrong?	Symptoms	First Aid, Drugs or Procedures used for Treatment
hyperglycemia			
hypoglycemia			
ischemic stroke			
hypoxia			
epilepsy			
depression			
mania			
schizophrenia			
obsessive compulsive disorder			
drug addiction to cocaine or heroin			

2. Name three drugs that cause addiction by stimulating the reward (pleasure) centre in the brain.
   a) What is the function of the reward centre?
   b) List three biological functions or actions that stimulate the reward centre.
   c) Why do drugs that stimulate the reward centre cause such powerful addiction?

3. What is the purpose of the sympathetic nervous system?
   a) what hormone/neurotransmitter stimulates the sympathetic nervous system?
   b) how does the sympathetic nervous system affect:
      - heart-rate
      - blood pressure
      - pupils
      - blood flow to muscles and brain
      - bronchioles

4. List three different medical problems that may cause a person to behave in an unusual or unacceptable manner.

5. List three different ways that the amount of neurotransmitter in the synapse can be increased.

6. Why do people with mental illnesses often resist taking their medications?

7. List five different medical conditions that may cause a seizure.

8. A person is having a tonic-clonic seizure. List three things that you should do, and three things you should NOT do.

9. A police officer has been called to a mentally ill street person who is hysterical and yelling at something they cannot see. In dealing with the patient, what should the officer do? What should she not do?

10. A paramedic is called to an intravenous drug user who is having a bad trip. The user is aggressive and threatening to commit suicide. List three precautions to take when working with this patient.

11. You are a paramedic who is attending a woman who is diabetic. What signs and symptoms can you use to indicate whether she is hypoglycemic or hyperglycemic? What treatment will you administer?

12. How are Type I and Type II diabetes the same? List three ways that they are different.

13. List three drugs that are opiates. What is the name of the neurotransmitter in the brain that is a natural opiate?

14. What drug is used to treat heroin addiction?

Unit 4: Fire Emergencies

Multiple Choice from Review online: 1 - 9, 11 – 17, 20 – 26, 42 – 53, 55 – 66, 68 – 78, 81, 82, 85, 89 – 95, 97 – 98, 100

Terms:

oxidation	endothermic reaction	smoke
combustion	ignition	hydrogen cyanide
self-sustaining	pyrolysis	carbon monoxide
fire	temperature	conduction
oxidizing agent	surface area	convection
fire tetrahedron	concentration	radiation
fuel (reducing agent)	lower flammable limit (LFL)	compartment
Class A fire	upper flammable limit (UFL)	plume
Class B fire	explosive (flammable) range	entrain
Class C fire	too rich to burn	thermal layering
Class D fire	too lean to burn	rollover
Class K fire	PPE	flashover
pyrophoric metals	SCBA	ventilation
exothermic reaction	hazardous combustion products	backdraft

Questions:

1. Complete the following chart:

Situation	Type of Energy for Ignition	Class of Fire
a pile of sawdust and wood chips "spontaneously" ignites		
a match ignites when it is rubbed across the strike pad on the package		
a woman touches the nozzle at the gas pumps and the gas vapours ignite		
a car hits a hydro pole; live wires ignite spilled gasoline		
a man is grinding a galvanized pipe; the zinc metal coating gets hot and ignites		
cylinders of acetylene gas are heated by the sun; they explode		

2. What does the following symbol indicate? What is the hazard associated with this symbol?

3. Complete the following chart for fire emergencies:

What's on Fire	Specific Hazards	What to Do or Not Do
Fire at a hazardous waste depot		
Fire from a spill from a gasoline tank truck		
Spill of chlorine gas from tank train		
Fire in a factory where they grind magnesium from steering columns		
Fire in a hospital		
Fire in a chemical laboratory		
A tightly sealed home has smoke coming from under the door in little puffs		

4. Describe four ways that you can make a campfire burn more rapidly. Be specific.

5. Describe two factors that will make gasoline burn more quickly.

6. How will the following factors affect how a fire burns?

a) increasing the surface area by spreading the fuel out

b) adding an oxidizing agent

c) making the fuel vapours very concentrated

d) cooling the fuel down

7. What does "too rich to burn" mean?

8. What is meant by ventilation in fire fighting? Why is it important when fighting a compartment fire?

9. What is backdraft? Describe the conditions that are necessary for backdraft to occur.

10. How are pyrolysis and vapourization the same? How are they different?

11. What is a reducing agent? Give three examples of reducing agents.

12. What are the five sources of energy that can ignite a fire? Give an example for each.

Summary Question:

Fire, police and ambulance are often required to handle difficult emergencies involving terrible injuries and tragedy. Many emergency personnel have difficulty coping after dealing with these emergencies.

a) what is the name of the disorder experienced in these situations?
b) what are some signs or indications that a person may be having trouble coping?
c) what are some of the things emergency services personnel can do to deal with difficult or upsetting events?