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ABSTRACT

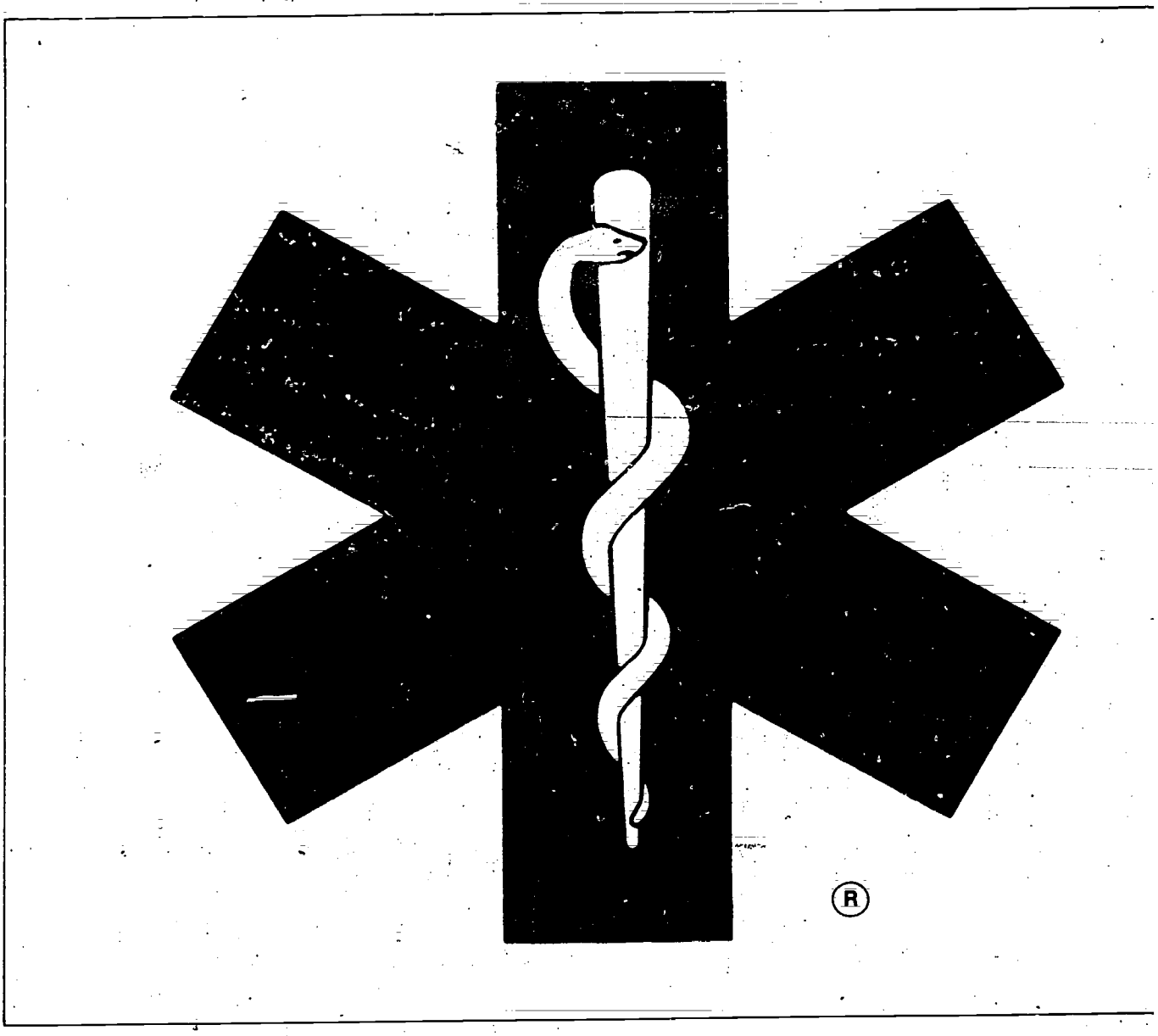
This workbook is designed to accompany the text of the same name and to serve as an aid to both learning and review during the course of study. The workbook consists of 15 module self-tests and vocabulary lists that follow the modules of the text. Tests consist of objective questions (multiple choice, fill-in-the-blank, short answers, and matching), case histories, and essay questions. Line drawings are used to illustrate questions. Both the questions and the vocabulary lists are taken from the text and from no other sources. Topics covered in the modules are the following: the emergency medical technician-paramedic, human systems and patient assessment, shock and fluid therapy, general pharmacology, respiratory system, cardiovascular system, central nervous system, soft-tissue injuries, musculoskeletal system, medical emergencies, obstetric/gynecological emergencies, pediatrics, management of emotional crises, extrication/rescue techniques, and telemetry and communications. (KC)

U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

Emergency Medical Care

A Manual for the Paramedic in the Field—Workbook



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A Manual for the Paramedic in the Field—Workbook

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INTRODUCTION

This workbook is designed to accompany the text *Emergency Medical Care—A Manual for Paramedics in the Field* and to serve as an aid to both learning and review during the course of study. Both the questions and vocabulary lists are taken from the text and no other source. They are intended to cause you to reread, study, and think as you progress.

In using this workbook you should put down what you consider your own best responses. Subsequent discussions with the instructor will add to your responses and, in turn, your mastery of the learning objectives.

CONTENTS

Module I
The Emergency Medical Technician-Paramedic
SELF-TEST

1. List six major components of the emergency medical services system.
2. List five items of equipment usually carried by mobile intensive care vehicles in addition to the "Essential Equipment for Ambulances," promulgated by the Committee on Trauma of the American College of Surgeons.
3. All of the following are necessary to prove negligent care EXCEPT which one?
   a. An injury occurred.
   b. The person accused had a duty to act.
   c. The person accused failed to act as another prudent person with similar training would have acted under similar circumstances.
   d. The patient did not give implied consent.
   e. Failure to act appropriately was the cause of the injury.
4. Which one of the following statements regarding Good Samaritan laws is FALSE?
   a. Good Samaritan laws are promulgated by the Department of Transportation for the protection of emergency medical personnel.
   b. Good Samaritan laws protect medical personnel from legal action arising from emergency treatment.
   c. The concept of reasonable and prudent care, as would be provided under similar circumstances by similarly trained personnel, is an important element in Good Samaritan laws.
   d. Good Samaritan laws do NOT protect a provider from responsibility if he gives NEGLIGENT care.
5. Define the difference between informed consent and implied consent.
6. List the five circumstances that define "abandonment."
7. List six important elements to a thorough and accurate medical record.

Module II
Human Systems and Patient Assessment
SELF-TEST

1. Based on the prefixes and suffixes learned in this module, define the following words.
   a. hemiparesis (hemi + paresis) =
   b. anesthesia (an + esthesia) =
   c. arthritis (arthro + itis) =
   d. myalgia (myo + algia) =
   e. pericardiocentesis (peri + cardio + centesis) =
2. List four types of joints.
3. Match the following terms with the phrase that describes each.
   a. cervical spine
   b. thoracic spine
   c. lumbar spine
   d. sacrum
   e. coccyx
   ..... articulates with the pelvis
   ..... neck
   ..... posterior articulation of the ribs
   ..... tailbone
   ..... lower back
4. Match the following terms with the phrase that describes each.
   a. humerus
   b. femur
   c. radius
   d. ulna
   e. tibia
   f. fibula
   ..... articulates with the pelvis
   ..... forms the medial malleolus of the ankle
   ..... forms the distal part of the elbow joint
   ..... shinbone
   ..... on the thumb side of the forearm
   ..... articulates with the scapula
5. Match the following with the phrase that describes each:
   a. skeletal muscle
   b. smooth muscle
   c. cardiac muscle
   ..... digestive tract, bronchi
   ..... voluntary
   ..... automaticity
6. Match the following terms with the phrases that relate to each:
   a. central nervous system
   b. peripheral nervous system
   c. autonomic nervous system
   ..... spinal cord
   ..... thoracic and lumbar spine
   ..... taste buds
   ..... brain
   ..... motor nerves to skeletal muscle
   ..... parasympathetic nerves
   ..... medulla
   ..... pain sensation receptors
7. Number the following parts in the order in which blood travels from the venous system to the arterial system.
   pulmonary artery
   left atrium
   right ventricle
   pulmonary vein
   venae cavae
   aorta
   right atrium
   left ventricle
   pulmonary capillaries
8. Match the following with the phrase that describes each:
   a. vein
   b. artery
   ..... thick, muscular wall
   ..... carries blood away from the heart
   ..... carries blood to the heart
   ..... high pressure vessel
   ..... pulse

9. Match the following terms with the word or phrase that describes each:

a. oropharynx
b. epiglottis
c. bronchus
d. trachea
e. larynx
f. alveolus

..... valve that protects the airway during swallowing
..... voicebox
..... throat
..... windpipe
..... air space where exchange of gases takes place
..... air tube in the lung

10. Match the following systems with their component organs:

a. digestive system
b. urinary system
c. male reproductive system
d. female reproductive system

..... kidney
..... uterus
..... liver
..... ureter
..... testes
..... duodenum
..... seminal vesicle
..... bladder
..... pancreas
..... ovary

11. List three factors that may delay gastric emptying.

12. Match the following endocrine glands with the hormone each produces:

a. pituitary
b. adrenal
c. pancreas
d. thyroid
e. parathyroid
f. ovary
g. testes

..... female sex hormones
..... hormone regulating metabolic rate
..... epinephrine
..... hormones regulating the other endocrine organs
..... male sex hormones
..... hormone regulating calcium
..... insulin

13. What kind of information about the patient can be derived from observations of the environment in which he is found?

14. A patient's chief complaint is abdominal pain. List 10 questions you might ask to learn more about the nature of the complaint.

15. List three aspects of a patient's medical history that may be important in the field.

16. List the components of the primary survey.

17. SYMPTOMS are complaints that the patient reports to you, and they form part of the history. SIGNS are things you observe in your physical examination. Classify each of the following as to whether it is a symptom or a sign:

..... chest pain
..... cyanosis
..... palpitations
..... dyspnea
..... diaphoresis
..... nausea
..... dysconjugate gaze
..... faintness

18. In each of the following questions, choose the correct answer.

a. you are examining a patient with suspected head injury and notice a clear discharge from the nose. What serious condition should this sign suggest to you?

(1) common cold
(2) hayfever with marked sinus congestion
(3) skull fracture with CSF leakage
(4) pulmonary edema

b. You are examining a patient who has been in an automobile accident and was thrown against the steering wheel. He is conscious but confused. Which of the following should you do FIRST?

(1) examine the abdomen for internal bleeding
(2) look for hip fracture
(3) palpate for fractured ribs
(4) immobilize the spine
(5) establish an airway

c. An ecchymosis over the mastoid, behind the ear, is called:

(1) Cheyne-Stokes' sign
(2) Battle's sign
(3) Kussmaul's sign
(4) Kernig's sign

d. When a mastoidal ecchymosis is present, it suggests:

(1) basilar skull fracture
(2) ruptured ear drum
(3) broken nose
(4) pneumothorax

e. Flaring of the nostrils, tugging of the trachea, and intercostal muscle retractions are all important signs of:

(1) emotional disturbance
(2) coma
(3) ruptured intraabdominal organ
(4) dyspnea

f. A distended jugular vein in a patient sitting at a 45 degree angle signifies:

(1) the patient's extreme muscular development with hypertrophy of the jugular vein
(2) back-up of blood behind the right heart, secondary to right heart failure
(3) excessive circulation after exertion
(4) subcutaneous emphysema from a tension pneumothorax

g. Pupils that are pinpoint may be caused by:

(1) fright
(2) atropine-like drugs
(3) narcotic drugs
(4) a darkened room

h. Cyanosis suggests:

(1) The patient has ingested a toxic blue substance
(2) The patient has been lying in bed for a long time
(3) The patient is anemic
(4) The patient's blood is not sufficiently oxygenated.

19. Match the following descriptions with the conditions in which they are seen.

a. trachea deviates AWAY from the affected side
b. trachea deviates TOWARD the affected side

..... bronchus obstructed
..... tension pneumothorax
..... hemothorax
..... simple pneumothorax

20. The following are groups of signs, each group suggestive of a certain condition. Match the group of signs with the condition it suggests.

a. labored breathing
distended jugular veins
gallop heart rhythm
rales
tachycardia

b. tracheal deviation
respiratory distress
unequal breath sounds
subcutaneous emphysema

c. dysconjugate gaze
facial weakness
paralysis of the left side
garbled speech

d. pinpoint pupils
coma
slow, shallow breathing

e. unequal pupils
periodic respirations
coma
decerebrate posture

f. patient lying very still
rigid abdomen
absent bowel sounds
tachycardia

g. paralysis of both legs
normal sensation in arms
absent sensation in both legs

..... heroin overdose
..... congestive heart failure
..... stroke
..... injury to lumbar spine
..... peritonitis
..... pneumothorax
..... cerebral edema

21. In the cases that follow, you are given data on two patients. The data are arranged in random order. For each case, list:
    a. the age and sex of the patient
    b. the chief complaint
    c. history of present illness
    d. any information about the past history
    e. a description of the physical examination
    f. EKG findings, if any
    g. treatment given in the field
    h. condition of the patient during transport

CASE #1

Patient had a history of diabetes. Her BP was 180/100. She was taking digoxin and Lasix at home. She appeared comfortable. Seventy-four years old. She had never has chest pain before. Respirations were 20. She was sitting upright in bed, in moderate distress. The pain radiated down the left arm and into the neck. There was no pedal edema. She called for an ambulance because of chest pain. Pulse was 110 and irregular. There was no known history of hypertension. A rhythm strip taken in the field showed atrial fibrillation. She was alert and fully oriented. Oxygen was administered at 6 liters per minute by nasal cannula. There was no distension of the jugular veins. The pain was sqeezing in character. There was no diaphoresis. She was stable during transport. Lungs were clear. She denied shortness of breath, dizziness, palpitations.

CASE #2

An air splint was applied to the left leg. Pulse was 100. The patient has known metastatic lung cancer. Sixty-three years old. Patient was walking down the street when he slipped on some ice and fell to the ground. Respirations were 18. He is known to have severe heart disease, with two myocardial infarctions in the past. His BP was 140/70. He called for an ambulance because of pain in his left leg. He was found lying on the ground, in moderate distress. He remained stable during transport, without change in vital signs. He takes nitroglycerin several times a week. His left lower leg showed deformity. He stated he had no feeling in his left leg below the ankle. He was alert and oriented. The rest of the physical examination was negative.

22. Rewrite the following case in the appropriate format. Feel free to change the wording so long as you include all the data in your presentation. He was bleeding profusely from a scalp laceration. He had no significant childhood illnesses. Pulse was 100 and regular. His mother called for an ambulance after he fell backwards, striking his head against a metal cabinet. Four years old. He was crying vigorously, alert, and moving all extremities. Condition during transport was stable. Respirations were 20. Mother stated that the child never lost consciousness. There was no evidence of injury elsewhere than the scalp. Sterile dressing was applied.

VOCABULARY

Check yourself on the following vocabulary words. If there are any meanings you do not know, refer to the text or consult the glossary at the end of the book.

homeostasis
anterior
posterior
ventral
dorsal
superior
inferior
superficial
proximal
distal
medial
lateral
craniad
caudad
supine
prone
abduction
adduction
flexion
extension
articulation
maxilla
mandible
cranium
suture
zygoma
vertebra
cervical
thoracic
lumbar
sacral
coccyx
scapula
clavicle
humerus
radius
ulna
femur
fibula
tibia
carpal
tarsal
acetabulum
patella
sympathetic
parasympathetic
cerebrospinal fluid
medulla
atrium
ventricle
pericardium
lymph
plasma
pharynx
trachea
larynx
epiglottis
bronchus
alveolus
esophagus
stomach
duodenum
jejunum
ileum
colon
pancreas
liver
gall bladder
bile
anus
rectum
kidney
ureter
paraplegia
ovary
uterus
fallopian tube
vagina
testes
seminal duct
prostate
cervix
hormone
pituitary
thyroid
adrenal
chief complaint
auscultation
palpation
percussion
inspection
decortication
decerebration
cyanosis
pallor
ecchymosis
dysconjugate
hyperpnea
tachypnea
Cheyne-Stokes breathing
subcutaneous emphysema
rales
rhonchi
wheezes
stridor
hemiplegia
quadriplegia

Module III
Shock and Fluid Therapy
SELF-TEST

1. List the compartments in which the total body water is divided. Which compartment contains 66 percent of the total body water?
2. Ions with positive charges are called ....., and ions with negative charges are called .....
3. Match the following chemical symbols with their names:
   a. Na^+
   b. K^+
   c. Ca^{++}
   d. Mg^{++}
   e. Cl^-
   f. HCO_3^-

   ..... magnesium ..... sodium
   ..... potassium ..... chloride
   ..... bicarbonate ..... calcium
4. Match the description with the ion(s) it fits:
   a. monovalent
   b. bivalent

   ..... sodium ..... bicarbonate
   ..... chloride ..... potassium
   ..... calcium ..... magnesium
5. In the process of osmosis, water will move across a semipermeable membrane from a solution of (lower or higher) ..... particulate concentration to a solution of (lower or higher) ..... particulate concentration.
6. Match the following terms with the definition that describes each:
   a. isotonic
   b. hypotonic
   c. hypertonic

   ..... solution having a solute concentration lower than that of the cells
   ..... solution having a solute concentration higher than that of the cells
   ..... solution having a solute concentration equal to that of the cells
7. Intravenous fluids containing (crystalloid or colloid) ..... molecules will increase the volume in the intravascular compartment.
8. Match the following electrolytes with the statement that describes each:
   a. sodium
   b. potassium
   c. chloride
   d. bicarbonate
   e. calcium

   ..... buffer
   ..... controls neuromuscular irritability
   ..... principal osmotic force in the extracellular fluid
   ..... follows sodium
   ..... when elevated, may produce peaked T waves on EKG
9. A pH of 7.6 is more (acid or alkaline) ..... than a pH of 7.1.
10. The most rapidly acting of the mechanisms involved in acid-base regulation is the (renal, respiratory, or buffer) ..... system.
11. When the hydrogen ion concentration increases, the pH (increases or decreases) ..... This shift is in an (acid or alkaline) ..... direction.
12. Supply the missing compound:
    a. H_2O + ... $\rightarrow H_2CO_3$
    b. H^+ + ... $\rightarrow H_2CO_3$
13. You are called to attend a very anxious, thin, 34-year-old woman complaining of dizziness. You note that she is breathing very deeply and very rapidly. You can assume that:
    a. her CO_2 is (higher or lower) ..... than normal.
    b. as a consequence, her carbonic acid level is (higher or lower) ..... than normal.

c. thus her pH is (increased or decreased) .....

d. her acid-base problem is called .....

14. You have been called to attend a 47-year-old male diabetic whom you find slowly responsive to painful stimuli. His wife says they could not buy his insulin, and that he has not taken any for 2 days. You notice a fruity odor on his breath, and he appears to be dehydrated. His vital signs are BP 140/90, pulse 110, respirations 48 and regular.

a. From the patient's history, you can determine that the patient's pH will be (higher or lower) ..... than normal.

b. His respiratory rate indicates that he is compensating for his acid-base abnormality by (blowing off or retaining) ..... his (oxygen or carbon dioxide) .....

c. ..... True ..... False: You should put a sack over the patient's head. Justify your answer.

15. You find a 10-year-old boy in coma from heroin overdose. He is breathing shallowly six times per minute. You can assume that

a. his CO_2 is (higher or lower) ..... than normal.

b. as a consequence, his carbonic acid is (higher or lower) ..... than normal.

c. thus his pH is (increased or decreased) .....

d. his acid-base derangement is called .....

16. Match the following terms with the statement that describes each:

a. hematocrit
b. hemoglobin
c. platelet
d. agglutination

..... a formed element of the blood that participates in clotting

..... the percentage of the blood accounted for by red blood cells

..... the clumping together of red cells by antibody

..... a protein that can unite with oxygen

17. Match the following blood preparations, derivatives, or substitutes with the clinical situation(s) in which each is most appropriately used:

a. whole blood
b. packed red blood cells
c. plasma or plasma substitute
d. crystalloid

..... shock due to extensive burns

..... hemorrhagic shock

..... severe dehydration

..... chronic anemia

18. List five possible complications of blood transfusion.

19. Match the following conditions with the signs and symptoms characteristic of each:

a. dehydration
b. overhydration

..... postural syncope

..... shrunken, furrowed tongue

..... edema

..... poor skin turgor

..... rales

20. Match the following intravenous infusion solutions with the condition(s) in which they are most appropriately used:

a. 5 percent dextrose in water (D5W)
b. normal saline or Ringer's lactate
c. plasmanate

..... dehydration due to excessive urinary losses

..... intravenous lifeline for patient in congestive heart failure

..... shock due to burns

..... severe hypotension due to massive diarrhea

..... stopgap measure in hemorrhagic shock until blood becomes available

21. Match the following clinical situations with the type of shock each may cause:

    a. cardiogenic shock
    b. hypovolemic shock
    c. neurogenic shock

    ..... reflex vasodilation in response to gastric distention

    ..... massive hemorrhage

    ..... profuse sweating

    ..... myocardial infarction

    ..... pulmonary embolism

    ..... polyuria

22. Which of the following gives the best indication of the adequacy of brain perfusion?

    a. urine output
    b. blood pressure
    c. state of consciousness
    d. equality of pupils

23. Every patient in shock, from whatever cause, should be given

    a. steroids
    b. vasopressors
    c. morphine
    d. oxygen

24. List three sites to be avoided when selecting a site for peripheral venipuncture.

25. You have been ordered to administer a liter of normal saline over 4 hours. Your administration set delivers 10 drops per milliliter. Calculate the correct infusion rate in drops per minute.

26. Your order is to administer half a liter of Ringer's lactate in half an hour. Your administration set delivers 15 drops per milliliter. Calculate the correct infusion rate in drops per minute.

27. List four potential complications of intravenous therapy.

28. You have started an IV of normal saline in an elderly, dehydrated man. About 30 minutes after initiation of the IV, he begins complaining of a backache and nausea. You notice that his teeth are chattering and he is shivering. You should:

    a. slow down the IV
    b. speed up the IV
    c. discontinue the IV
    d. leave the IV as it is and administer steroids

29. List three advantages to the use of MAST.

30. List three relative contraindications to the use of MAST.

31. Select the statement that describes the correct order of deflating MAST:

    a. both legs first, then the abdominal segment
    b. the abdominal segment, followed by one leg at a time
    c. one leg at a time followed by the abdominal segment
    d. one leg, followed by the abdominal segment, followed by the other leg
    e. all segments at once

32. MAST is most suited to the treatment of

    a. cardiogenic shock
    b. hypovolemic shock
    c. neurogenic shock

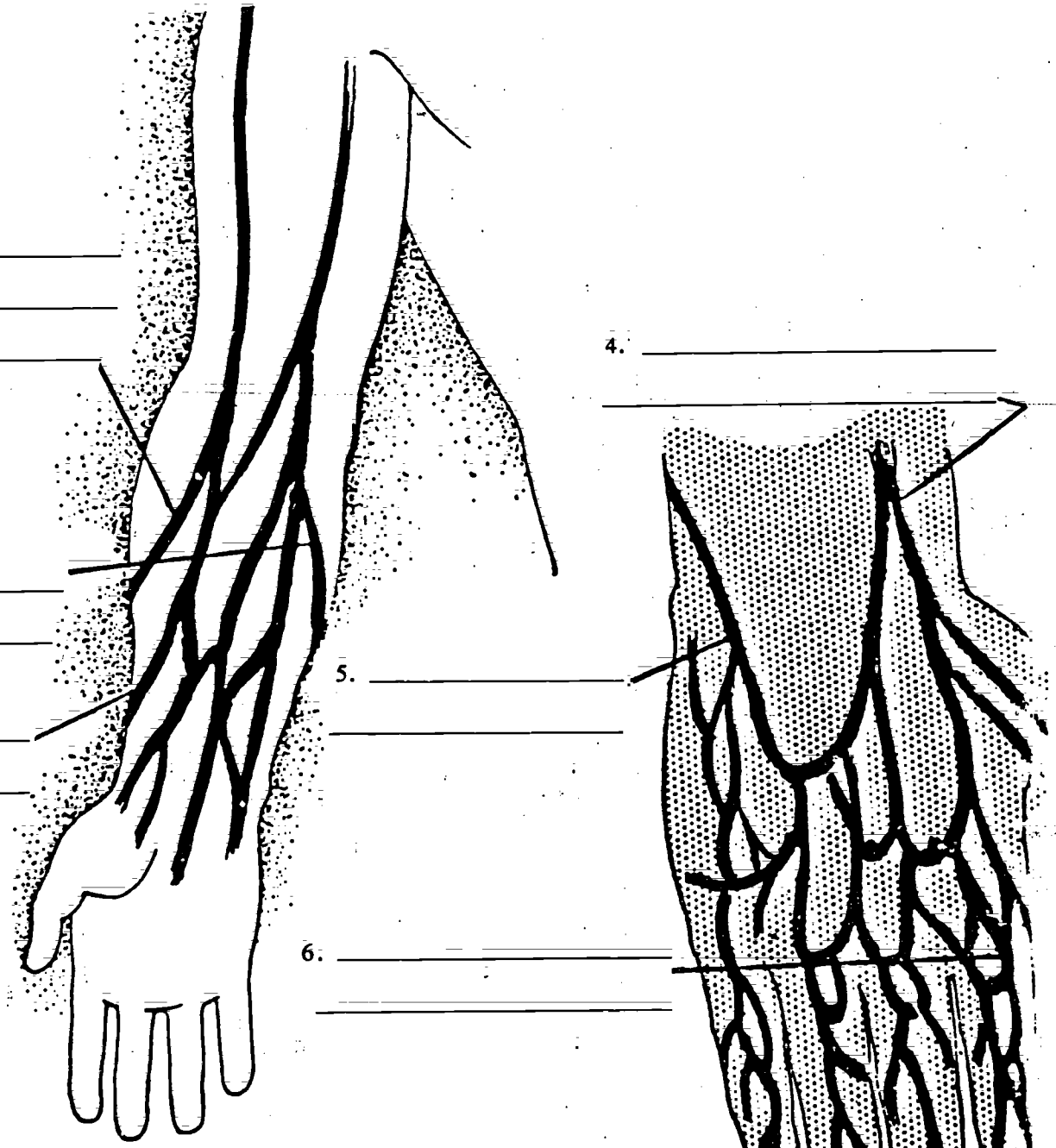
Vocabulary

Check yourself on the following vocabulary terms. If there are any meanings you don't know, refer to the text or consult the glossary at the end of the book.

total body water
intracellular fluid
extracellular fluid
interstitial fluid
intravascular fluid
electrolyte
ion
cation
anion
milliequivalent
monovalent
bivalent
osmosis
semipermeable
hypertonic
hypotonic
isotonic
crystalloid
colloid
pH
acid
alkali
base
buffer
erythrocyte
hemoglobin
Rh factor
volume expander
transfusion reaction
air embolism
dehydration
overhydration
edema
shock
perfusion
cardiogenic
hypovolemic
neurogenic
septic shock
vasopressor
saline
aseptic
antecubital
subclavian
jugular
thrombophlebitis
infiltrate
autotransfusion
incompatibility
agglutination
thrombocyte
leukocyte

SELF-TEST (Module III)

Identify Sites by filling in blank spaces:



VENIPUNCTURE SITES

Module IV
General Pharmacology
SELF-TEST

1. Match the following generic names of drugs with the proprietary name with which each is associated:
   a. furosemide
   b. norepinephrine
   c. diazepam
   d. naloxone
   e. oxytocin

   ..... Narcan
   ..... Lasix
   ..... Pitocin
   ..... Levophed
   ..... Valium

2. Match the following drug terms with the statement that describes each:
   a. pill
   b. capsule
   c. suppository
   d. solution
   e. suspension
   f. tincture

   ..... finely divided drug incorporated in a liquid, separates on standing
   ..... cylindrical gelatin container enclosing a dose of medication
   ..... dilute alcohol extract of a drug
   ..... drug mixed in a firm base that melts at room temperature
   ..... drug shaped into ball or oval, often coated to disguise taste
   ..... liquid containing one or more chemical substances entirely dissolved

3. Arrange in order the following routes of drug administration from that having the fastest rate of absorption to that having the slowest rate of absorption.

   a. subcutaneous
   b. oral
   c. intravenous
   d. endotracheal
   e. intramuscular

4. Match the following terms with their related characteristics:
   a. parasympathetic system
   b. sympathetic system

   ..... mediated through nerves in the thoracolumbar regions
   ..... acetylcholine
   ..... slows the heart
   ..... vagus
   ..... norepinephrine
   ..... vegetative functions
   ..... epinephrine
   ..... blocked by atropine
   ..... bronchodilation
   ..... cholinergic
   ..... adrenergic

5. Match the following terms with the effects associated with each:
   a. alpha stimulation
   b. beta stimulation

   ..... increased heart rate
   ..... vasoconstriction
   ..... no effort on the heart
   ..... bronchodilation
   ..... vasodilation

6. Match the following categories with the drugs to which they apply:
   a. alpha stimulator
   b. beta stimulator
   c. beta blocker

   ..... isoproterenol
   ..... propranolol
   ..... norepinephrine
   ..... phenylephrine
   ..... epinephrine

7. Convert the following to decimal fractions:

   $6/10$ $\quad$ $54/1000$ $\quad$ $3/1000$ $\quad$ $45\,18/100$

8. Work out the answers to the following arithmetic problems involving fractions:

   $1.5 \times 23.42 =$
   $0.5 \times 0.254 =$
   $6.25 \div 2.5 =$
   $100 \div 0.25 =$
   $6.54 - 0.32 =$
   $11.513 + 2.1 =$

9. Convert from milligrams to grams:

   453 milligrams =
   1240 milligrams =
   25 milligrams =

10. Convert from grams to milligrams:

    5 grams =
    31 grams =
    0.6 grams =

11. Convert from milliliters to liters:

    3411 milliliters =
    500 milliliters =
    65 milliliters =

12. Convert from liters to milliliters:

    3 liters =
    0.75 liters =
    0.075 liters =

13. A physician wishes to replace a liter of fluid lost by vomiting. Your bottles each contain 500 milliliters. How many bottles of fluid should the patient receive?

14. You are instructed to give a patient 0.020 grams of a medication that is dispensed in tablets of 5 milligrams each. How many tablets should the patient receive?

15. A patient has taken an overdose of medication; he has ingested 25 tablets of 10 milligrams each. How many grams of medication has he taken?

16. What is the weight in kilograms of a 200 pound man?

17. You are instructed to administer 80 milligrams of furosemide, which is supplied in a concentration of 10 milligrams per milliliter. What volume of medication must you give to administer the correct dose?

18. You are told to add 0.5 grams of lidocaine to 250 milliliter of D5W. Lidocaine is supplied in a concentration of 50 milligrams per milliliter. How much lidocaine should you add to the IV bag? What will be the resultant concentration of lidocaine in the bag, in milligrams per milliliter? Assuming there are 60 drops in a milliliter, how many drops per minute would you have to administer to give the patient 1 milliliter per minute?

19. A patient weighs 150 pounds. You are instructed to give him 0.01 milligram of atropine per kilogram of his body weight. Atropine is supplied as 1 milligram per milliliter. What volume of atropine should you administer?

20. Match the following drugs with the indication appropriate to each:

    a. sodium bicarbonate
    b. lidocaine
    c. morphine
    d. atropine
    e. epinephrine
    f. calcium chloride

    ..... to stimulate the heart in asystole or fine ventricular fibrillation

    ..... to treat acidosis

    ..... to speed the heart rate by blocking the vagus

    ..... to relieve pain

    ..... to treat electromechanical dissociation

    ..... to suppress ectopic foci in the ventricle

Vocabulary

Check yourself on the following vocabulary words. For any meaning you do not know, refer to the text or check the glossary at the back of the book.

generic name
trade name
extract
powder
pill
capsule
tablet
suppository
ointment
pulvule
solution
suspension
fluid extract
tincture
spirits
syrup
elixir
emulsion
milk
liniment
lotion
ampule
vial
intravenous
intramuscular
sublingual
subcutaneous
intracardiac
depressant
stimulant
physiologic action
irritation
antagonism
cumulative action
tolerance
synergism
potentiation
habituation
idiosyncrasy
hypersensitivity
parasympathetic
vagus
acetylcholine
cholinergic
atropine
sympathetic
norepinephrine
epinephrine
alpha effect
beta effect
receptor
adrenergic
isoproterenol
phenylephrine
blocker
propranalol
indication
contraindication
apothecary system
metric system
gram
milligram
milliliter
decimal
sodium bicarbonate
lidocaine
morphine sulfate
calcium chloride
metaraminol
furosemide
diazepam
naloxone
syrup of ipecac
activated charcoal
aminophylline
corticosteroid
oxytocin
neurotransmitter
catcholamines
liter
untoward reaction
kilogram
therapeutic action

Module V
Respiratory System
SELF-TEST

1. Trace the course that inspired air travels from the nose to the lungs, naming the structures it passes on the way.
2. An endotracheal tube inserted too far will often come to lie in the (left or right) ..... mainstem bronchus.
3. Gas exchange in the lungs takes place in the ....., which are airspaces surrounded by tiny capillaries.
4. Between the lung and the chest wall is a potential space known as the .....
5. Desaturated blood from the right heart reaches the lungs via the ..... In the lungs, these vessels subdivide into tiny capillaries, which transport the blood to the alveoli for gas exchange. Oxygenated blood then returns to the left heart via the .....
6. A 24-year-old male is found unconscious in his apartment. There are needle tracks on his arms, and his pupils are pinpoint. He is breathing shallowly approximately six times per minute.
   a. What is the site of this patient's respiratory problem (CNS, muscles, air passages, or lungs)?
   b. Is the patient's minute volume greater or less than normal?
   c. Would you expect his arterial PCO_2 to be increased or decreased?
   d. What changes would you expect in his arterial pH?
7. Patient A has a respiratory rate of 10 per minute and a tidal volume of 300 milliliters. Patient B has a respiratory rate of 15 per minute and a tidal volume of 400 milliliters. Which patient has the greater minute volume?
8. In a healthy young adult breathing room air, the PO_2 of arterial blood is approximately .... and the PCO_2 approximately .....
   a. If this individual decreases his tidal volume significantly, his arterial PCO_2 will (increase or decrease) ..... This condition is called (hypoventilation or hyperventilation) .....
   b. If this individual becomes nervous and begins breathing very rapidly, his PCO_2 will (increase or decrease) ..... This condition is called (hypoventilation or hyperventilation) .....
9. A patient has an arterial PCO_2 of 20 torr. His tidal volume is normal. What can you assume about his respiratory rate?
10. A patient with polio is found to have an arterial PCO_2 of 55 torr. He is breathing 20 times per minute. What is the probable cause of his blood gas abnormality?
11. A 54-year-old man is found in fulminant pulmonary edema. He is sitting bolt upright in a chair, laboring to breathe, with frothy sputum coming from his mouth.
    a. Would you expect his arterial PO_2 to be higher or lower than normal? Why?
    b. What might be done to improve his arterial PO_2?
12. In normal individuals, the respiratory rate is activated principally by increases in (PO_2 or PCO_2) ..... and decreases in (PO_2 and PCO_2) .....
13. List four signs of respiratory distress.
14. Match the following terms with the statements that describe them:

    a. wheezing
    b. snoring
    c. stridor
    d. rales
    e. rhonchi

    ..... fine, moist sounds associated with fluid in the smaller airways

..... a whisling sound, often associated with asthma

..... rattling noises in the throat or bronchi, often caused by mucus

..... a harsh, high-pitched sound heard on inspiration with upper airway obstruction

..... a rumbling sound produced by partial upper airway obstruction

15. Match the findings of chest percussion with the conditions in which they are likely to be found:

a. dullness to percussion
b. hyperresonance to percussion

..... asthma

..... hemothorax (affected side)

..... tension pneumothorax (affected side)

..... emphysema

..... pneumonia

16. List four causes of upper airway obstruction. Which is the most common?

17. You are dining in a restaurant on your night off and you notice a man at an adjacent table doing a strange pantomine. He looks to be in acute distress, but is completely silent. His eyes are open wide and he lurches forward, then pushes himself back from the table and begins to stagger. You rush over to him and ask him what is wrong, and he does not reply. He slumps to the floor at your feet.

a. What do you think may have happened to him?

b. What is the FIRST step you will take to try to help him?

c. If the first action is ineffective, what do you do next?

18. On another night, you are called to this same restaurant to attend a patient in respiratory distress. He hoarsely tells you, "I knew I should not have eaten it, but I just can't resist shrimp." He complains further of a "lump in his throat" and you note that he is covered with hives. As you examine him, his respiratory distress increases and his breathing becomes stridorous.

a. What is happening?

b. How would you manage this patient?

19. List three factors that contribute to airway obstruction in asthma.

20. You are called to attend a 56-year-old man whose chief complaint is dyspnea. He states that he has a chronic cough, but over the past several days the cough has gotten worse and the sputum has turned from white to yellow-green. On physical examination, he is a heavy-set man, with a flushed somewhat cyanotic complexion, and is in obvious respiratory distress. Vital signs are pulse 110, BP 150/90, and respirations 36. Rhonchi and wheezes are heard on auscultation of the chest.

a. What is this patient's problem?

b. What is the FIRST thing you will do for him, after making certain he has an adequate airway?

c. What possible complications may arise from your treatment, and how will you deal with them?

21. You are called to help a 25-year-old woman in her home. When you arrive you find her sitting upright, laboring to breathe. She is too breathless to speak. On the kitchen table you notice a Medihaler. Her pulse is 120 per minute, BP 160/80 and respirations 30 per minute and labored. Wheezes are heard in all lung fields.

a. What is this patient's problem?

b. What steps will you take in treating this patient?

22. A 63-year-old woman calls for an ambulance because of shortness of breath. She states that she was awakened from sleep by shortness of breath and had to get up and walk around. She is under treatment for hypertension and takes digitalis and a diuretic medication. On physical examination she appears apprehensive and is breathing with difficulty. Her pulse is 120 per minute, BP 190/110 and respirations 30 per minute. On auscultation of the chest, diffuse wheezing is heard.

a. What is this patient's problem?

b. How will you manage her?

23. A 35-year-old man was driving while intoxicated and his car struck a utility pole. When you arrive, you find him pinned by the steering wheel, conscious, and laboring to breathe. There is no evidence of facial trauma. His airway is patent. You extricate him on a long and short spineboard. On secondary survey you note that the left anterior chest wall bulges outward on expiration.

a. What injury does this patient have?

b. What other injuries might be associated?

c. How will you manage this patient?

24. A passenger in the same car as question #23 was thrown forward against the dashboard and is in respiratory distress. On examination, you note that his pulse is 120, BP 80/50, and respirations 36 per minute. His trachea is deviated to the right. Breath sounds are poorly heard on the left, and the left chest is hyperresonant to percussion. There is subcutaneous emphysema on the upper chest and about the neck.

a. What has happened to this patient?

b. How will you manage this patient?

25. During a domestic fight, a 25-year-old man was stabbed in the anterior right chest. You find him in severe respiratory distress. His trachea deviates to the left on inspiration, and the right chest is hyperresonant to percussion with absent breath sounds.

    a. What type of injury has this patient sustained?

    b. After establishing an airway, what is the next measure you must take?

    c. After you have taken all the appropriate steps to treat this patient, he does well for about 10 minutes. Then he develops signs of increasing respiratory distress. The right chest is found to be hyperresonant with decreased breath sounds. What do you think has happened, and how will you manage it?

26. A construction worker was sending a load of bricks up to the third floor of a construction site by a carrier-pulley apparatus when the rope broke and the bricks came down on top of him, injuring his chest. When you uncover him, you notice that his chest appears caved in, and his face, neck, and upper chest are blue. His eyes are bulging out and his lips are cyanotic. His pulse is 120 and thready. His BP is 60 palpable, and his respirations 28 and labored.

    a. What is this patient's syndrome called?

    b. Beside the obvious injuries to the chest, what other injuries may be associated, given the circumstances of the accident?

    c. How will you manage this patient?

27. An 18-year-old boy is found floating in a swimming pool, face up. By-standers state that he had dived into a shallow part of the pool and did not come up for a long time.

    a. What special precautions are necessary in treating this near-drowning victim, given the circumstances of the accident?

    b. How would the pathophysiology of this patient's lungs differ from that of a near-drowning victim pulled from salt water?

28. A 16-year-old boy is caught in an undertow while surfing. His friends drag him to shore, where you find him to be apneic. A pulse is still present. After several minutes of ventilating him, he begins breathing spontaneously and regains consciousness. He say he feels a little shaky but is otherwise in good shape. How would you manage this patient from this point on?

29. A 42-year-old man fell asleep while smoking in his den. The chair caught fire and soon the house was in flames. The firemen bring the occupants of the house outside to your unit. The victims include:

    (1) The 42-year-old man, who was found trapped in the den, trying to get out;

    (2) His wife, who was found unconscious in an upstairs smoke-filled bedroom;

    (3) His 14-year-old son, who was found conscious and alert, trying to drag his mother out of the bedroom; and

    (4) His 12-year-old daughter, who was found leaning out the window of another bedroom.

    a. Which victim(s) is/are most apt to have respiratory problems? Why?

    b. Which victim(s) should receive oxygen?

30. A 55-year old woman has been confined to bed for several weeks following an operation. Her family called for an ambulance because she had suddenly become extremely short of breath on getting up to go to the bathroom. On examination, you find her anxious and tachypneic. Her pulse is 120, BP 100/60, and respirations 36 per minute. The chest is clear to auscultation.

    a. What is the pathophysiology behind this patient's distress?

    b. How will you manage this problem?

31. A 32-year-old woman calls for an ambulance because of dizziness and dyspnea. She states that she has been very tired lately and today began to feel dizzy. She also complains of numbness around her lips. On physical examination, you observe a thin, anxious woman breathing very deeply 36 times per minute. Pulse is 100 and BP is 130/85. Lung fields are clear to auscultation.

    a. Why does this patient have numbness around her lips?

    b. How can you best assist this patient?

32. List four safety precautions necessary in the handling of oxygen cylinders.

33. Describe the two maneuvers for establishing an airway WITHOUT adjuncts.

34. Which of the following devices can deliver the highest oxygen concentration when used with the appropriate liter flow?

    a. plastic face mask
    b. nasal cannula
    c. nonrebreathing mask

35. Under what circumstances should an oropharyngeal airway NOT be used?

36. What oxygen concentrations can be delivered with a bag-valve-mask:

    a. without oxygen supplementation?
    b. with oxygen supplementation at a flow of 12 liters per minute?
    c. with 12 liters per minute oxygen flow and an added reservoir?

37. Why must any mask used to ventilate a patient be transparent?

38. Which of the following methods of artificial ventilation gives the highest tidal volumes?
    a. bag-valve-mask
    b. pocket mask
    c. mouth-to-mouth
    d. bag-esophageal obturator airway

39. What is the principal hazard of tracheal suctioning? What can be done to minimize this hazard?

40. List four advantages of endotracheal intubation over other adjunctive or nonadjunctive techniques in controlling the airway?

41. List two hazards of endotracheal intubation. What methods do you use to prevent these?

42. You have intubated a 53-year-old man in cardiac arrest. Your assistant reports that he cannot hear breath sounds on either side of the chest.
    a. What must you do first?
    b. What steps, in order, must you take to help this patient?

43. What is the maximum time that ventilations should be interrupted for an intubation attempt?

44. List three circumstances in which you should NOT use an esophageal airway.

45. What steps must be taken before an esophageal airway is removed from an unconscious patient?

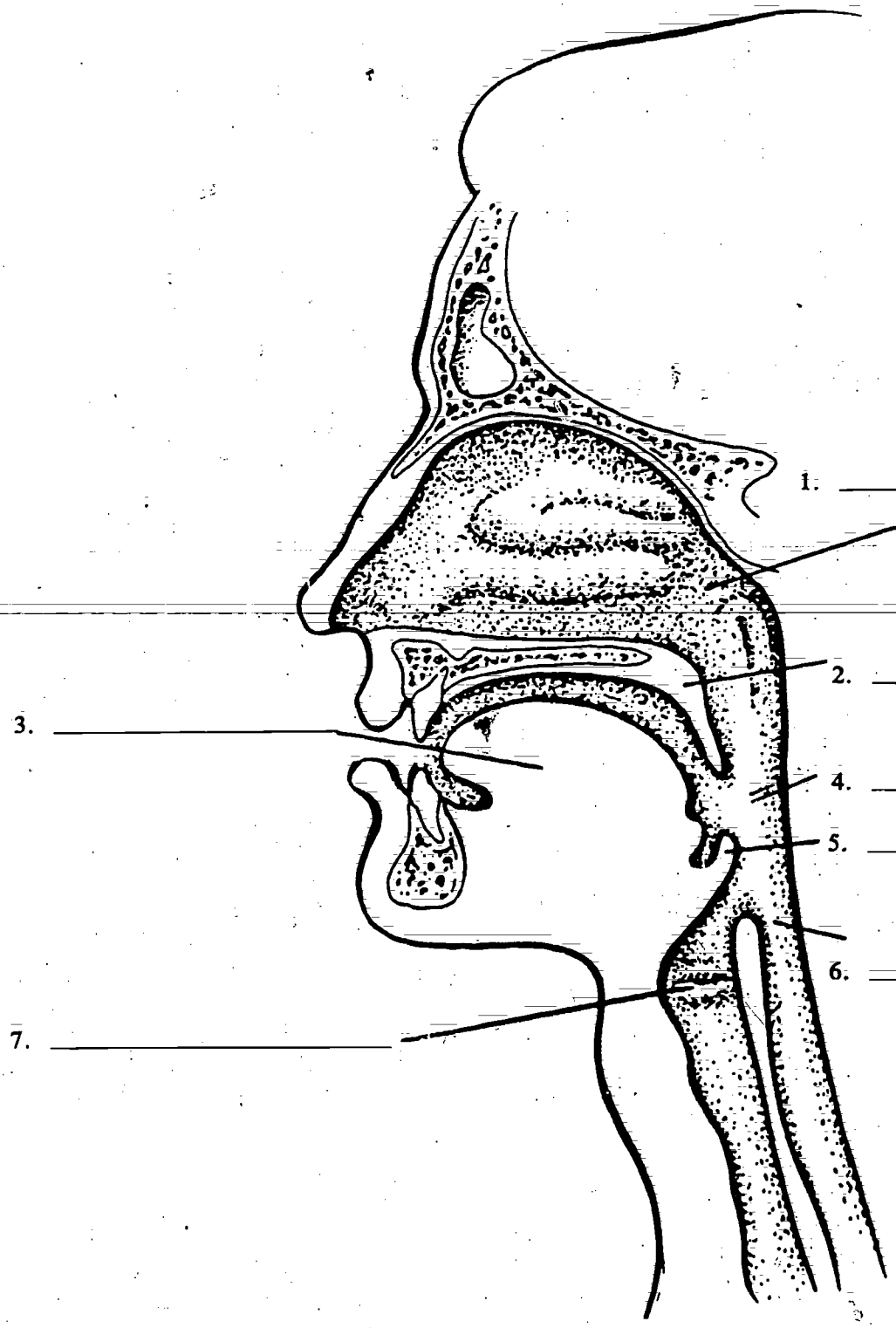
Vocabulary

Check yourself on the following vocabulary words. For any meanings you do not know, refer back to the text or consult the glossary at the end of the book.

adjunct
alveoli
angioneurotic edema
apnea
atelectasis
bag-valve-mask
bronchus
bronchospasm
carina
cricothyreotomy
cricothyroid membrane
cyanosis
demand valve
dyspnea
endobronchial
endotracheal
epigolottis
esophageal obturator airway
flail chest
hemothorax
hypercarbia
hyperventilation
hypoxemia
IPPB
larynx
laryngoscopy
laryngospasm
laryngeal edema
Magill forceps
minute volume
open pneumothorax
orthopnea
paradoxical respirations
pharynx
pneumothorax
rales
rhonchi
shunt
sucking chest wound
stridor
subcutaneous emphysema
tachypnea
tension pneumothorax
tidal volume
trachea
vital capacity
wheezes

SELF-TEST (Module V)

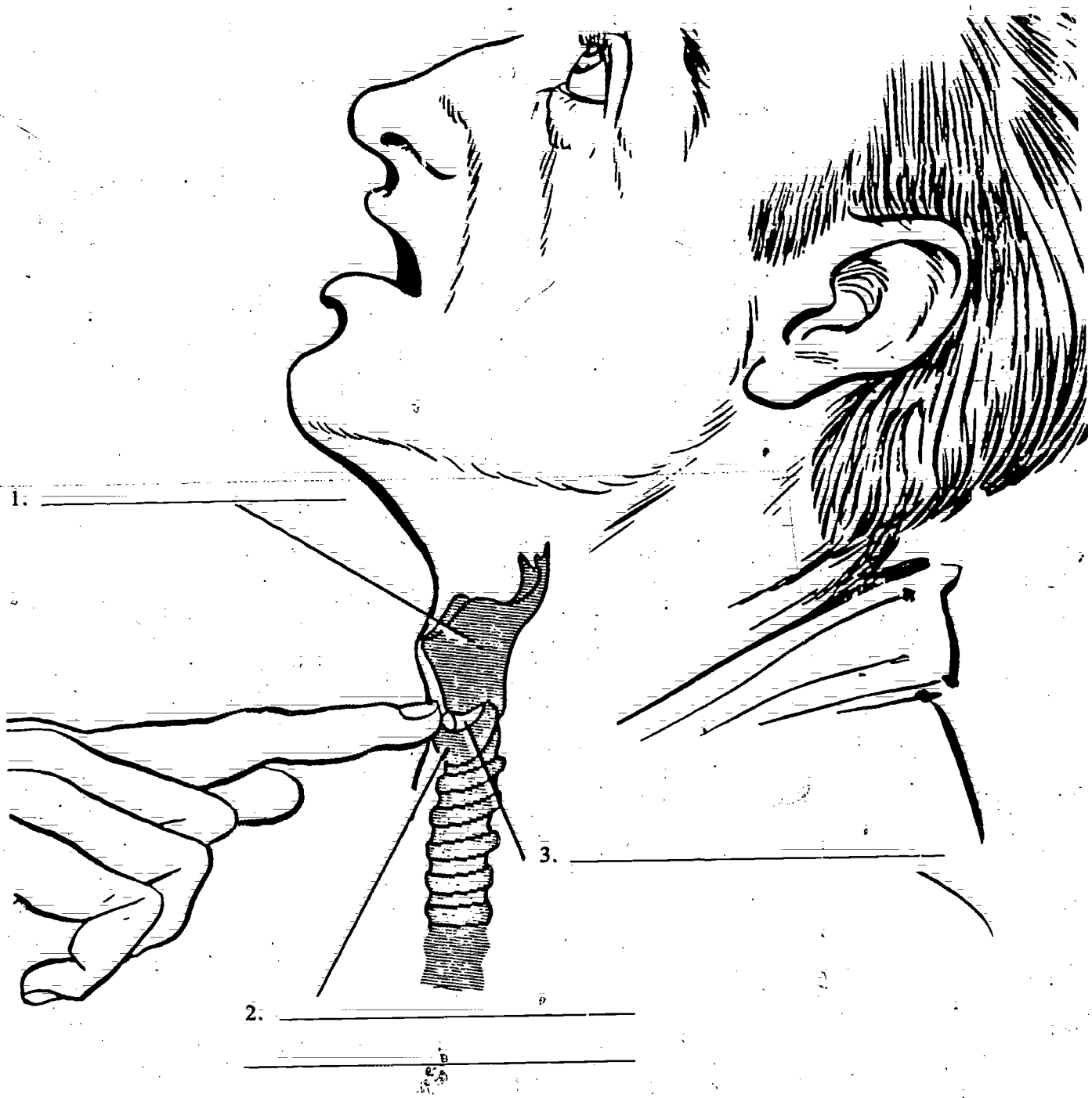
Identify the parts by filling in blank spaces:



CROSS SECTION of PHARYNX

SELF-TEST (Module V)

Fill in blank spaces with correct titles:



LOCATING THE CRICOTHYROID MEMBRANE

Module VI
Cardiovascular System
SELF-TEST

1. Arrange the following structures in the order in which they are traversed by blood returning to and through the heart from the peripheral tissues:

pulmonary artery	pulmonary vein
left ventricle	right ventricle
right atrium	left atrium
pulmonary capillaries	vena cavae
tricuspid valve	mitral valve
pulmonic valve	aortic valve
aorta	

2. Match the following with the structures in which they are carried:

   a. blood with low oxygen concentration
   b. blood with high oxygen concentration

   ..... aorta
   ..... pulmonary vein
   ..... renal vein
   ..... right ventricle
   ..... pulmonary artery
   ..... carotid artery
   ..... left atrium

3. Match the following terms with the statement that applies to each:

   a. cardiac output
   b. stroke volume
   c. contractility
   d. peripheral resistance

   ..... the capacity to vary the speed and degree of contraction
   ..... amount of blood pumped out of the left ventricle per minute
   ..... the state of arteriolar vasoconstriction
   ..... amount of blood pumped out of the ventricle in a single beat

4. Complete the equation:

   stroke volume × heart rate = ...

5. A patient has a stroke volume of 50 milliliters and a pulse of 100 per minute. What is his cardiac output?

6. A patient has a tachycardia of 120 per minute. If his stroke volume is the same as it was at 80 per minute, will his cardiac output increase or decrease?

7. Increasing venous return to the normal heart should (increase or decrease) ..... cardiac output.

8. When a moderate blood loss occurs, the (sympathetic or parasympathetic) ..... nervous system fires, stimulating the arteries to (dilate or constrict) ..... to maintain blood pressure.

9. A patient has had a spinal injury that damaged his sympathetic nervous system, causing his peripheral vessels to dilate. Assuming that his cardiac output remained constant, what would happen to his blood pressure?

10. Arrange the following in the order in which they are ordinarily traversed by an electrical impulse in the process of cardiac depolarization.

    Bundle of His
    AV node
    Purkinje fibers
    internodal pathways
    SA node
    right and left bundle branches

11. Arrange in order the following pacemakers from that with the fastest intrinsic rate of firing to that with the slowest.

    AV node
    Purkinje system
    SA node

12. Match the following components of the EKG with the statement that is appropriate to each:

a. P wave
b. QRS complex
c. T wave
d. PR interval
e. ST segment
f. RR interval

..... repolarization of the ventricles

..... beginning of atrial depolarization to the beginning of ventricular depolarization

..... time between two successive ventricular depolarizations

..... depolarization of the atria

..... end of ventricular depolarization to the beginning of repolarization

..... depolarization of the ventricles

13. Match the following medications sometimes taken by cardiac patients with the conditions for which they are usually prescribed.

a. digitalis
b. quinidine
c. nitroglycerin
d. diuretics
e. propranolol

..... too fast heart rate

..... chest pain

..... chronic PVCs

..... heart failure

..... hypertension, fluid retention

14. Upon eliciting a history from a patient with chest pain, you learn that he once had a serious adverse reaction to a medication the dentist used to numb his mouth. What medication that you might ordinarily use in the treatment of cardiac patients would be avoided in this patient, based on this piece of historical information?

15. List five risk factors for the development of atherosclerotic disease.

16. List five symptoms of acute myocardial infarction.

17. You are called to attend a 51-year-old man complaining of severe crushing chest pain, which has been present for about 1 hour. He appears pale and anxious. His pulse is 40 per minute with occasional premature ventricular beats, BP 100/60, respirations 26 per minute. Describe the steps you would take, in order, in managing this patient.

18. Match the following types of syncope with the situation each describes:

a. vasovagal syncope
b. syncope of cardiac origin
c. postural syncope
d. vagal syncope

..... patient with heart block who had syncopal episode while lying in bed

..... medical student who fainted when he saw his first cadaver

..... 53-year-old man who had syncopal episode after violent coughing

..... soldier who fainted after standing in formation for 3 hours in the hot sun

19. At 0200 hours, you are called to attend a man who "can't breathe." He states that he felt moderately well when he went to bed, although he has been a little tired lately, but was awakened from sleep shortly before he called you by an inability to breathe. He found that he could not lie still, but had to get up and walk around in order to get any relief from his symptoms. You find him tachypneic, with a pulse of 120 per minute and diffuse wheezes and rales in his chest. What is wrong with this patient? What medications might be used in management? What procedures should you perform to assist him?

20. A 63-year-old man fainted while sitting in his den watching television. You find him awake but slightly confused on the floor.

a. What kind of information would you want to obtain in your history?
b. What things would you be looking for in your physical examination?
c. How would you manage this patient?

21. A 28-year-old man was driving his Porsche at 40 miles per hour when he lost control of the car and struck a utility pole head on. What possible injuries to his heart might he have sustained? For what life-threatening injuries should you be especially alert? (Two at least.)

22. You are called to attend a 36-year-old woman who had sudden onset of severe headache and vomiting. You find her confused and combative with a blood pressure of 210/150. While you are examining her, she has a grand mal seizure. What is her problem, and how will you manage this patient?

23. Which two drugs may be administered by the tracheobronchial route in cases of cardiac arrest if an IV cannot be immediately initiated?

24. In cardiac arrest, to reduce acidosis, what is the correct dose of sodium bicarbonate?

25. If an adult has been in cardiac arrest for less than 2 minutes, the correct amount of joules for defibrillation is .....

26. If an adult has been in cardiac arrest for an undetermined amount of time, what procedures must be done before defibrillation is attempted?

27. Describe the steps, in order, for resuscitation of an adult discovered to be in cardiac arrest for an undetermined amount of time.

28. What is the recommended maximum amount of watts per second for adult defibrillation?

29. Describe the preferred paddle placement for defibrillation.

30. What must be done immediately if no pulse is felt AFTER a defibrillation attempt is made?

31. List three media used between defibrillation paddles and skin. Which is most advantageous?

32. How much pressure should be used to press the paddles into the skin?

33. Match each drug with the condition that indicates its use:

a. atropine
b. propranolol
c. nitroglycerin
d. dopamine
e. sodium bicarbonate
f. morphine
g. digoxin
h. isoproterenol
i. metaraminol
j. lidocaine
k. furosemide
l. calcium chloride
m. epinephrine

..... cardiogenic shock
..... third degree AV block
..... frequent premature ventricular contractions
..... electromechanical dissociation
..... angina pectoris
..... sinus bradycardia with hypotension
..... acidosis
..... intractable PAT
..... pain of AMI
..... atrial and ventricular tachydysrhythmias
..... congestive heart failure
..... pulmonary edema
..... unwitnessed cardiac arrest

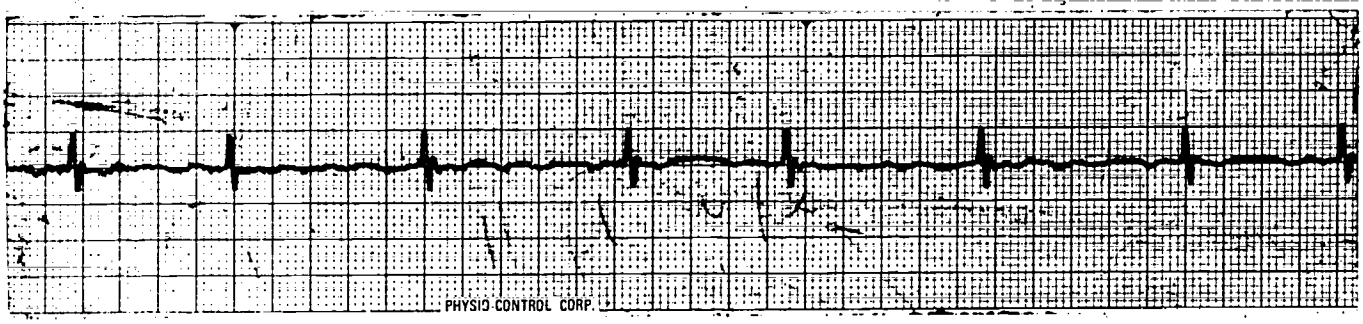
Vocabulary

Check yourself on the following vocabulary words. For any meanings you don't know, refer to the text or check the glossary at the end of the book.

pericardium
myocardium
coronary artery
atrium
ventricle
pulmonary artery
pulmonary vein
right heart
left heart
septum
systole
diastole
aorta
vena cava
capillary
cardiac output
stroke volume
contractility
parasympathetic
sympathetic
vagus
stimulator
blocker
alpha
beta
automaticity
pacemaker
sinoatrial node
atrioventricular node
Bundle of His
Purkinje fibers
depolarization
repolarization
refractory periods
P wave
QRS complex
T wave
ST segment
PR interval
isoelectric line
RR interval
palpitations
arteriosclerosis
atherosclerosis
angina
necrosis
infarction
diaphoresis
anorexia
edema
rales
cyanosis
tachypnea
syncope
vasovagal
tamponade
hypertension
epistaxis
ectopic focus
ischemia
artifact
normal sinus rhythm
sinus arrhythmia
sinus arrest
sinus bradycardia
sinus tachycardia
PVCs
PACs
PJCs
supraventricular tachycardia
atrial fibrillation
atrial flutter
first degree AV block
second degree AV block
Mobitz I (Wenckebach)
Mobitz II
third degree AV block
compete heart block
ventricular tachycardia
ventricular fibrillation
asystole
electromechanical dissociation
congestive heart failure (CHF)
pulmonary edema
basic life support
advanced life support
defibrillation
cardioversion
inotropic
chronotropic
dromotropic
idioventricular rhythm
tachydysrhythmia
demand pacer
transthoracic pacer
accelerated nodal rhythm
bundle branch block

34. The remainder of the problems involve arrhythmia interpretation. For each of the rhythms pictured, systematically analyze the rhythm and answer the questions listed.

a.



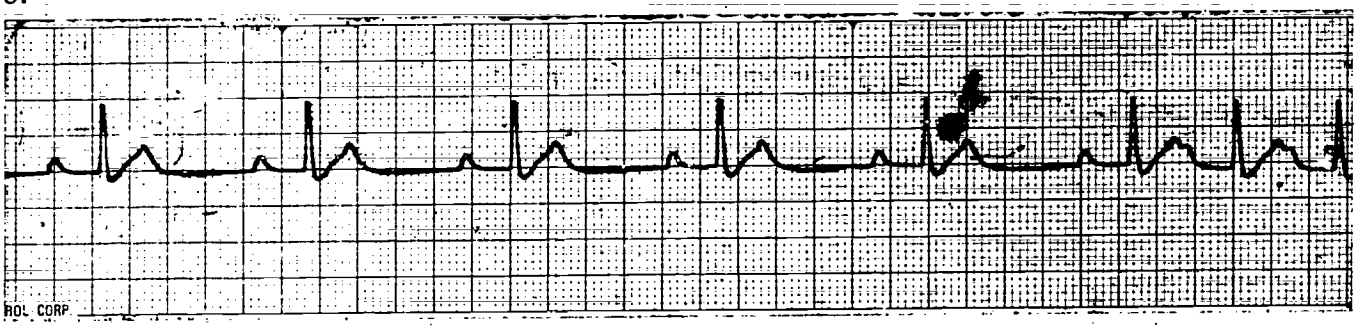
Rhythm _____ Rate _____

P Waves _____ QRS Complex _____

Diagnosis _____

Treatment _____

b.



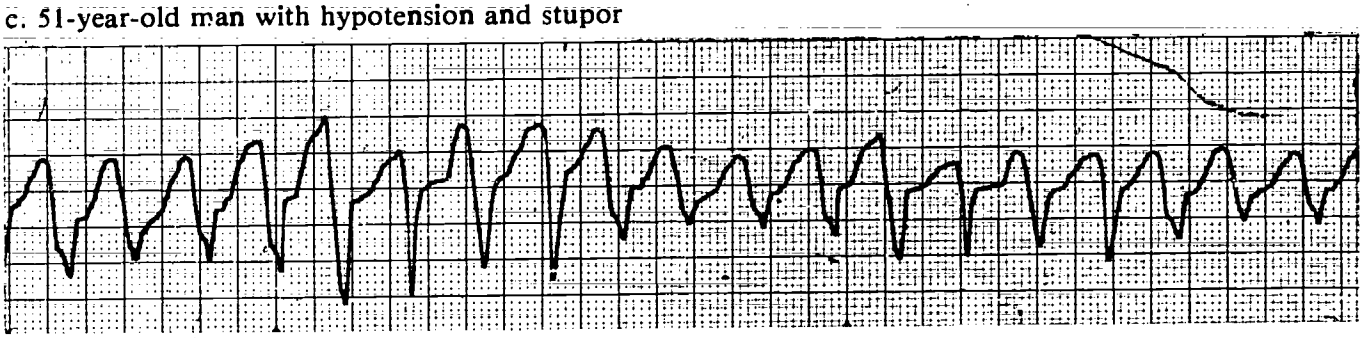
Rhythm _____ Rate _____

P Waves _____ QRS Complex _____

Diagnosis _____

Treatment _____

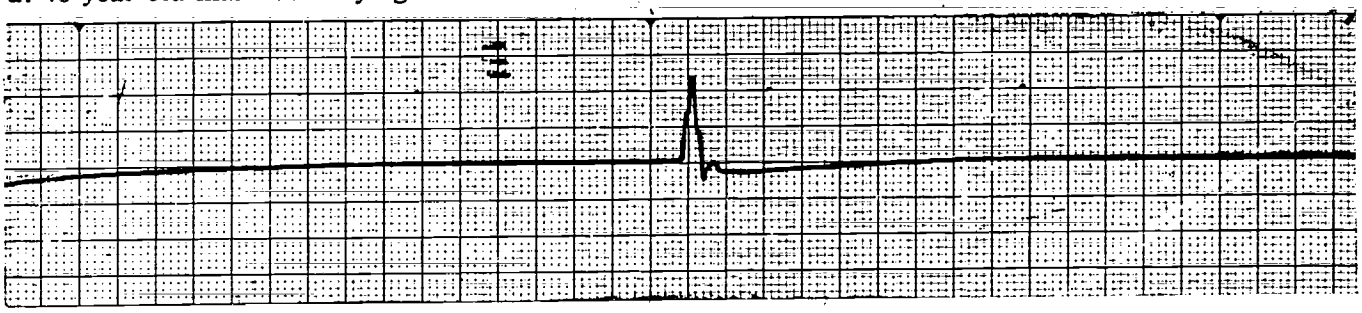
c. 51-year-old man with hypotension and stupor



Diagnosis _____

Treatment _____

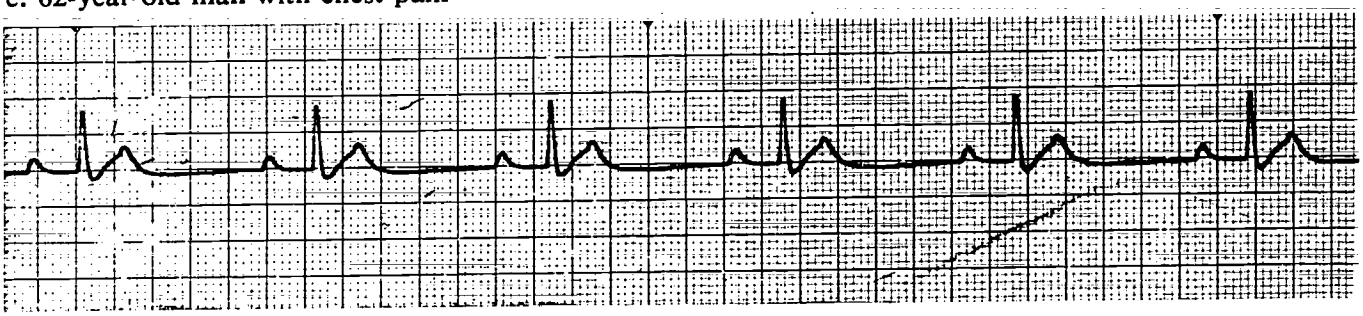
d. 48-year-old man found lying unconscious 5 minutes before you arrived



Diagnosis _____

Treatment _____

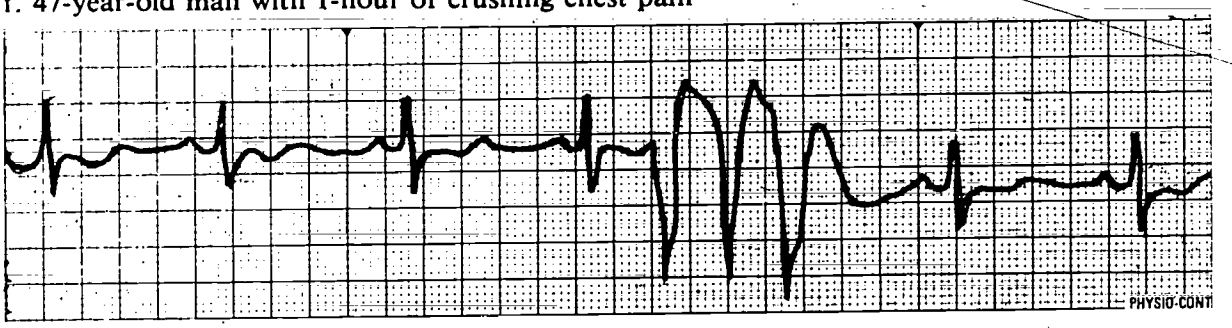
e. 62-year-old man with chest pain



Diagnosis _____

Treatment _____

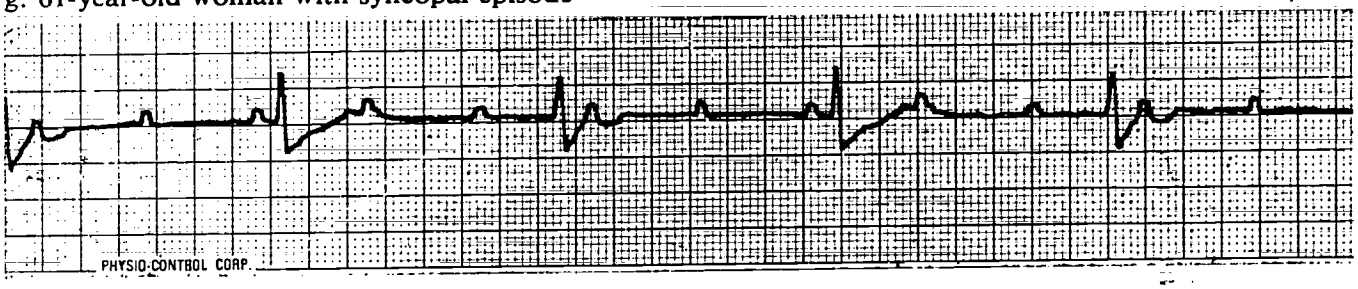
f. 47-year-old man with 1-hour of crushing chest pain



Diagnosis _____

Treatment _____

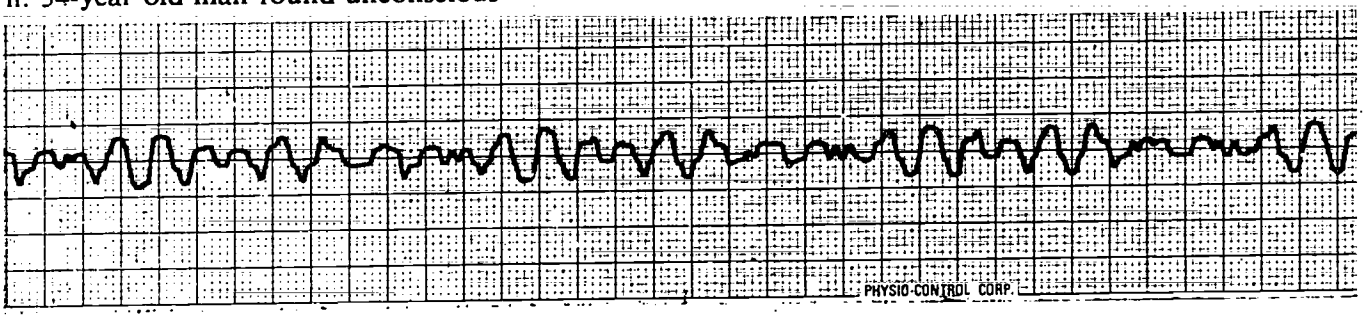
g. 61-year-old woman with syncopal episode



Diagnosis _____

Treatment _____

h. 54-year-old man found unconscious

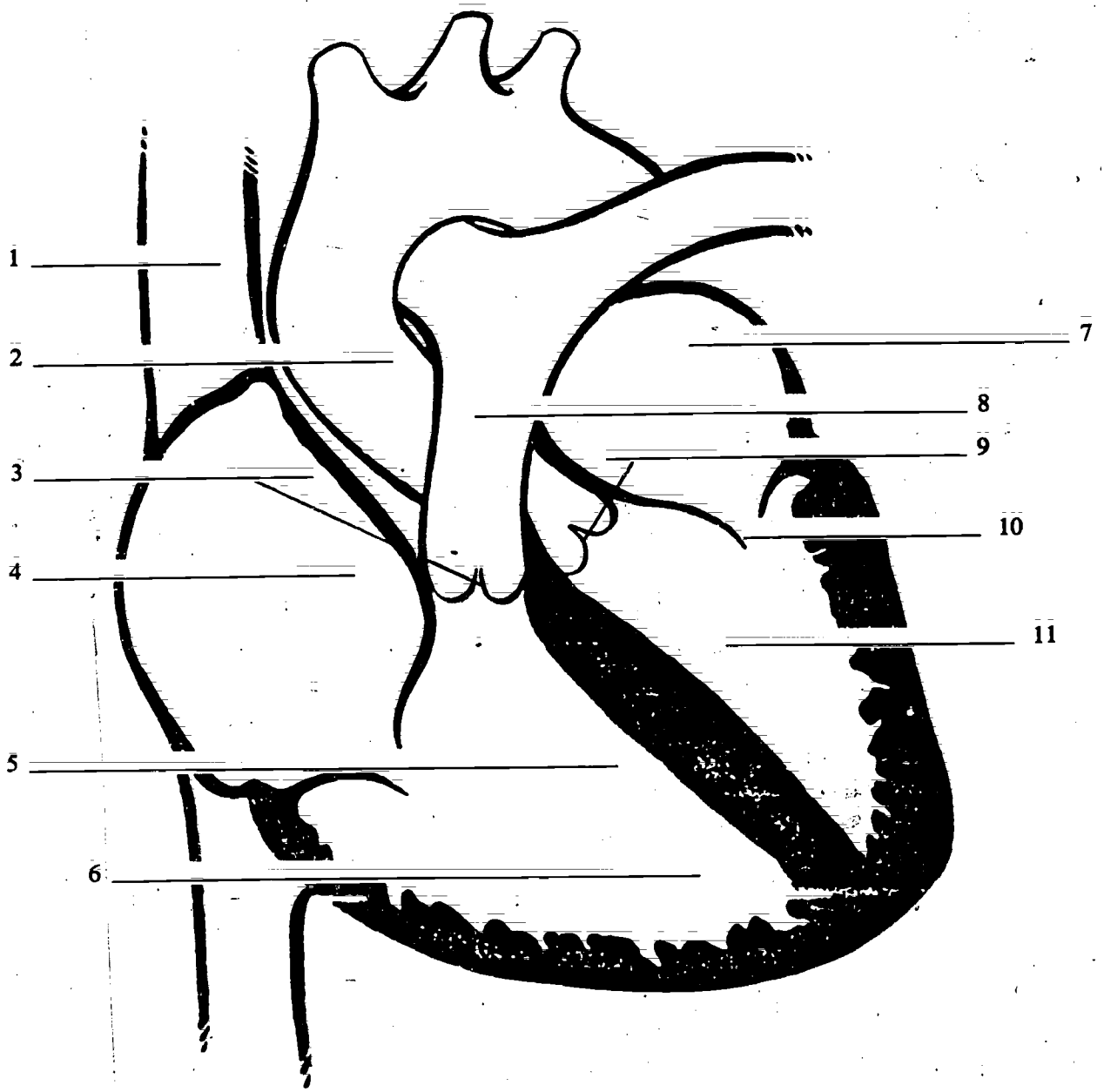


Diagnosis _____

Treatment _____

SELF-TEST (Module VI)

Identify the parts of the heart indicated by the numbers:



THE HEART in CROSS SECTION

Module VII
Central Nervous System
SELF-TEST

1. Match the following CNS structures with the statement that describes the function of each:

   a. cerebrum
   b. cerebellum
   c. medulla
   d. spinal cord

   ..... contains centers for respiration, heart rate, and other vital functions

   ..... contains long nerve tracts of the somatic and sympathetic nervous systems

   ..... controls equilbrium and coordination

   ..... mediates all higher, integrated functions, such as thinking

2. List three important functions served by the nerve tracts carried in the spinal cord.

3. A patient has sustained trauma to his thoracic spine. You find him hypotensive and disoriented to time and place. There is no evidence of head injury or of significant internal or external hemorrhage. How do you account for the signs and symptoms?

4. Describe the methods for establishing an airway in the comatose patient with suspected cervical spine injury.

5. A patient was assaulted by a gang of hoodlums and found unconscious on the street. On primary survey, you note that he has multiple contusions about the head, but otherwise there are no other obvious signs of injury. His pulse is 130 per minute, respirations 30 per minute and shallow, BP 70/40. List the possible injuries in order of severity and state your management of these problems.

6. List five measurements of vital functions that should be assessed periodically in the patient with head trauma.

7. You are called to attend a patient who was found unconscious in an alley. He has a bruise on his forehead, but no other sign of injury. His skin is cold and clammy, pulse 120, BP 110/80, respirations 20 per minute. Describe in order the steps in managing this patient.

8. An 18-year-old boy is found floating face down in a swimming pool, after having dived into shallow water. Upon reaching him, you note that no bubbles are issuing from his nose or mouth, which are under water. Describe your management of this patient.

9. A patient involved in an automobile accident has no sensation to pinprick from the toes to the clavicles. Where in the spine do you think the injury occurred? What life-threatening complication of the injury at this level should you anticipate?

10. Which of the following patients should be immobilized with a cervical collar and backboards? (There may be more than one correct answer.)

    a. A man who fell from a second-story scaffold; he is moving all extremities spontaneously.

    b. A woman with a steering wheel injury to her chest, but she is complaining of numbness of her left arm.

    c. An elderly gentleman fell down a flight of steps and reports that he "fainted" at the top of them. He has a fracture of his right hip, but otherwise he is moving all extremities.

    d. A young man was found unconscious by the side of a road with tire marks across his abdomen. He is still unconscious with no reaction to pain stimulus.

    e. An elderly lady who walks with a cane complains of sudden onset of weakness and tingling in both legs.

11. List six possible causes of coma.

12. A patient is found unconscious in his home. There are liquor bottles on the floor, and the patient's breath smells of alcohol. Describe your management of this patient.

13. Your call is to a man having seizures. A woman with him says that he is 26-years-old, has a history of seizures, and that she does not know if he took his medications, but that he did not have them with him. While you are examining the pa-

tient, he has two grand mal seizures, lasting 1 minute each with a 10 minute postictal period between them. How would you manage this patient?

14. Your patient is a 67-year-old woman who "just stopped talking" as related by her daughter. The daughter also says that her mother's physician has prescribed several medications and shows you vials of hydrochlorothiazide and Aldomet. The patient at present is anxious and alert. She is able to follow most commands, but she cannot move her right arm and leg. What is the pathophysiology of the patient's illness and what shall you do for her?

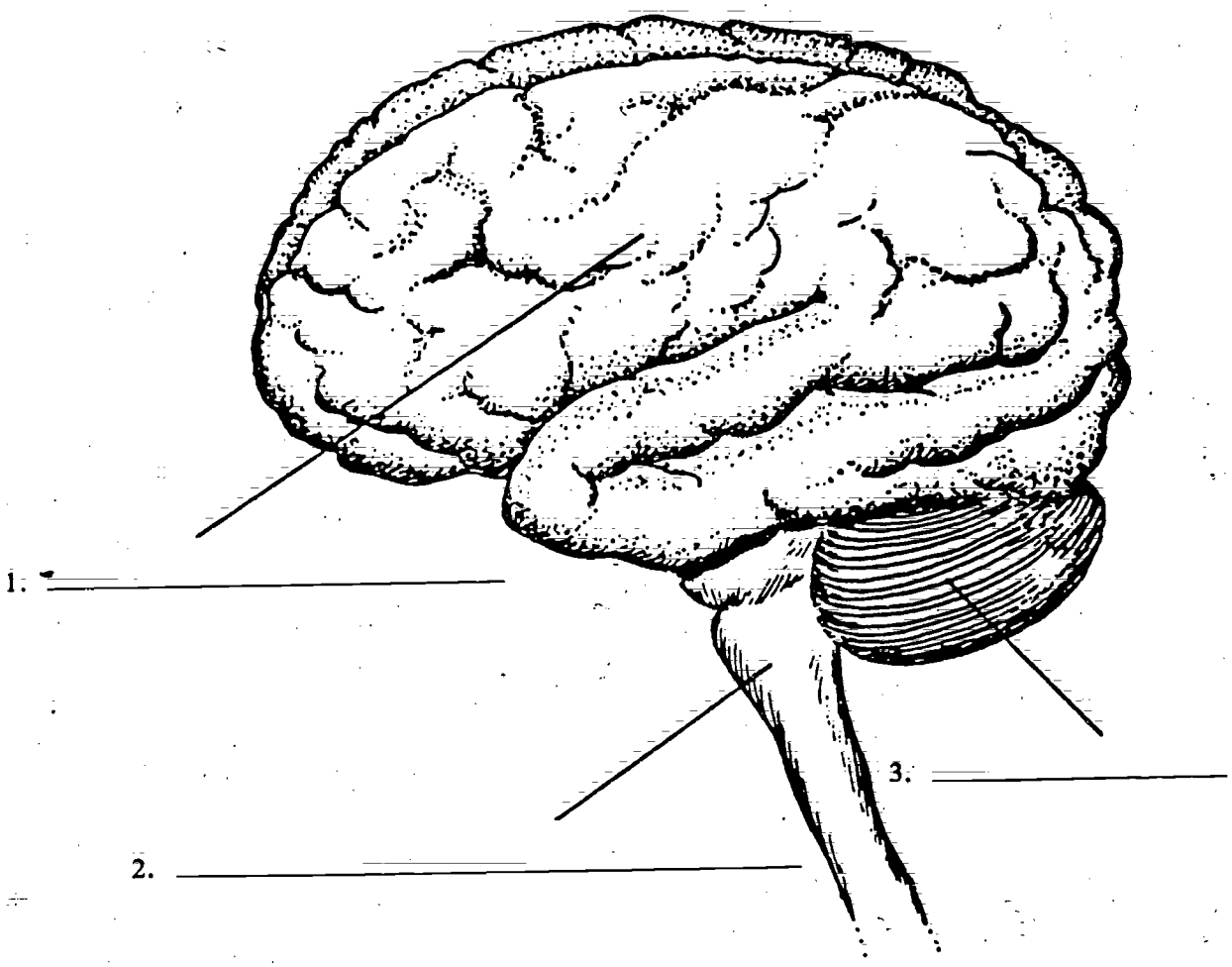
Vocabulary

Check yourself on the following vocabulary words. For any meanings you don't know, refer back to the text or consult the glossary at the end of the book.

cranium
cerebrum
cerebellum
medulla
sympathetic nervous system
autonomic nervous system
parasympathetic nervous system
doll's eyes
extraocular motions
Cheyne-Stokes breathing
central neurogenic hyperventilation
Battle's sign
raccoon sign
postictal
idiopathic
grand mal seizure
petit mal seizure
focal motor seizure
psychomotor seizure
aura
tonic
clonic
status epilepticus
cerebrovascular accident
transient ischemic attack
otorrhea
rhinorrhea
cerebrospinal fluid
paralysis
quadriplegia
hemiplegia
paraplegia
paresthesia
motor aphasia
sensory aphasia
hemiparesis
Glasgow Coma Scale
osteoporosis
decerebrate
decorticate

SELF-TEST (Module VII)

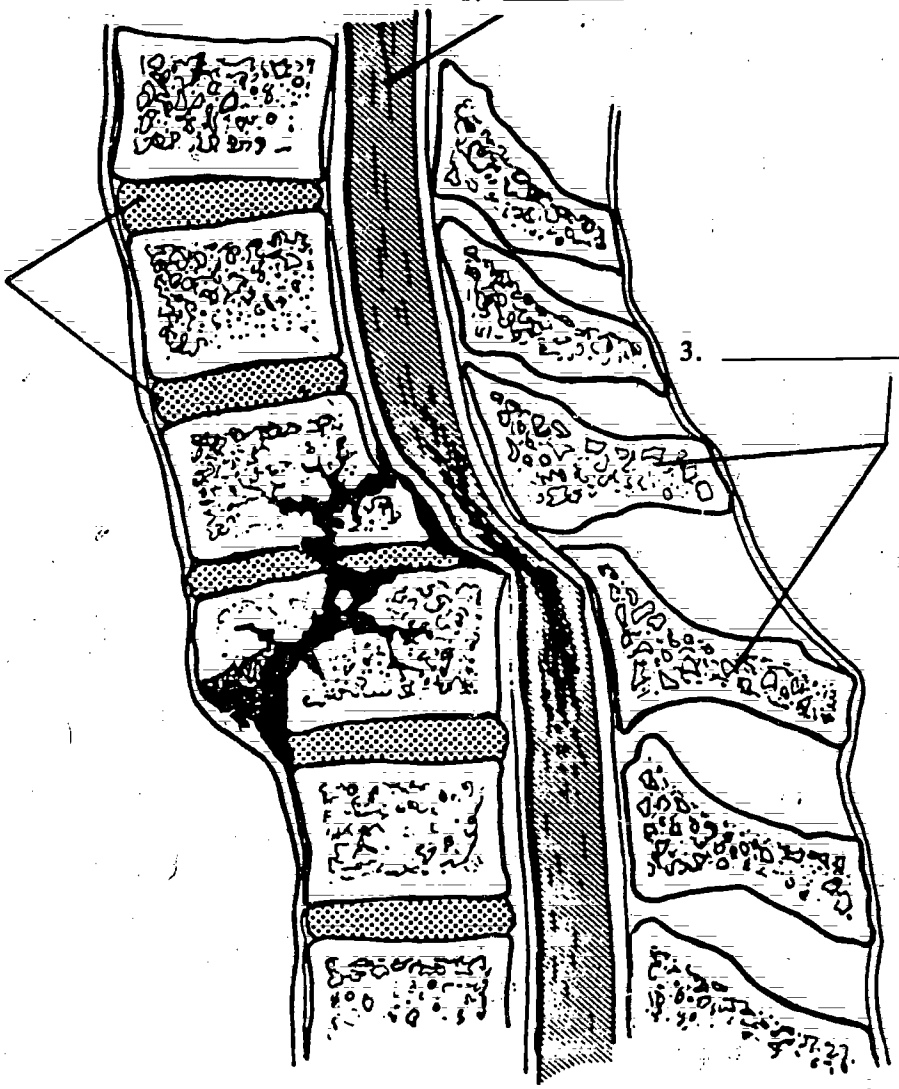
Identify the brain divisions by filling in blank spaces:



BRAIN DIVISIONS

SELF-TEST (Module VII)

Fill in the blank spaces with names of parts and complete the title by filling in the type of injury (blank no. 4)



SPINAL CORD

Module VIII
Soft Tissue Injuries
SELF-TEST

1. Pale, cold, clammy skin is an indication of peripheral (vasodilation or vasoconstriction) .... and is sometimes due to discharge of the (sympathetic or parasympathetic) ..... nervous system in response to falling cardiac output.
2. Match the following terms with the statement which describes each:

   a. contusion
   b. abrasion
   c. laceration
   d. puncture
   e. avulsion

   ..... a stab from a pointed object
   ..... closed injury
   ..... cut inflicted by a sharp instrument
   ..... the tearing loose of a flap of skin and tissue beneath
   ..... superficial wound caused by rubbing or scraping
3. A 35-year-old man is found with an ice pick sticking out of his thigh. His vital signs are stable; he is alert. Describe the management of this patient.
4. A 58-year-old man received burns from hot water over the entire surfaces of both arms and the entire anterior thorax. Estimate the percent of his body involved in the burn. Would this be considered a critical burn? How would you manage this patient?
5. Your patient is a 75-year-old woman who backed into an open fire and her nightgown caught fire. Her burns covered the surfaces of both legs, her back, and her lower body to her ribs. She has a history of chronic respiratory disease and had a stroke 2 years ago. Describe the treatment for this patient and list the precautions to be taken en route to the hospital.
6. List four factors that qualify a burn as critical.
7. List three factors that might lead you to anticipate respiratory problems in the burned patient.
8. A 6-month-old child is brought out of a burning house. The child has second- and third-degree burns over both legs and part of the left arm. She is crying feebly and hoarsely. You are 35 minutes from the hospital. How would you manage this patient?
9. A woman has been splashed with some strong lye that she was using to clean out her kitchen sink drain. When you arrive, she is digging under the sink for an antidote. On examination you note lye over her blouse and slacks. How would you manage this patient?
10. When you walk into the local drugstore, you notice a small child apparently "frozen" to the electrically powered ice cream storage box. The child is not moving and does not respond to your calls. List in order the steps you must take to release and treat her.
11. What is usually the MOST EFFECTIVE means of controlling external hemorrhage?
12. List two potential hazards associated with the use of a tourniquet to arrest bleeding in an extremity.
13. A 6-year-old child accidentally got ammonia in his eye. How would you manage this patient?
14. A child was running with a stick in his hand and tripped, jamming the stick through his right cheek. It is still impaled in his cheek when you arrive. Describe the management of this case.
15. A 42-year-old man, a passenger in an automobile that struck an abutment, sustained a head injury when his head went through the windshield. At present he is conscious and alert, spitting out a considerable amount of blood. On examination you find his mandible swollen and unstable. He says there are teeth missing. List in order the steps you would take in caring for this patient.
16. A 3-year-old child has stuffed a dried bean in her left ear and two beans in her right nostril. Her mother is frantic and pleads for you to "do something." You are 10 minutes from the hospital. The child is becoming upset by her mother's

panic. How are you going to handle this predicament?

17. A 31-year-old woman was stabbed in the side of the neck and is bleeding profusely around the blade. Her pulse in 120 per minute, BP 90/50, respirations 30 per minute. She is conscious. List in order the steps you would take in treating this patient.
18. In the same room as the patient described in #17, there is another woman lying on the floor, conscious, with her viscera protruding through an abdominal wound. Vital signs are stable. How would you manage this patient?

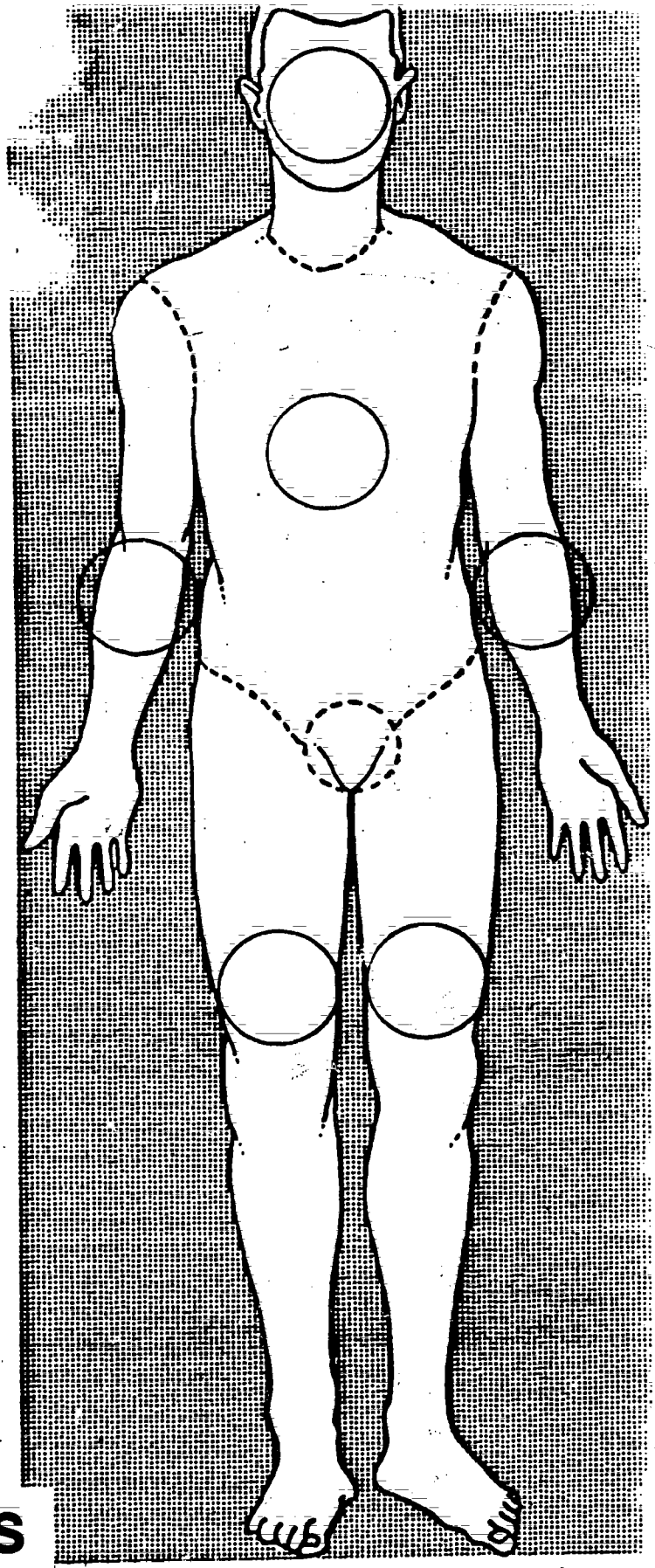
Vocabulary

Test yourself on the following vocabulary words. For any meanings you do not know, refer to the text or check the glossary in the back of the book.

hemeostasis
epidermis
dermis
melanin
sweat gland
sebaceous gland
pallor
cyanosis
ecchymosis
hematoma
abrasion
laceration
puncture
avulaion
impaled object
contusion
first degree burn
second degree burn
third degree burn
antidote
tourniquet
conjunctivae
sclerae
iris
cornea
temperomandibular joint
mandible
maxilla
hygroscopic
epistaxis
air embolism
subcutaneous emphysema
evisceration
orbit
zygomatic
ethmoid
sphenoid
foramen
formaina

SELF-TEST (Module VIII)

Within each circle place the percentage number representing that particular portion of the body for the purpose of estimating the extent and seriousness of burns.



THE RULE OF NINES

Module IX
Musculoskeletal System
SELF-TEST

1. Match the following descriptive terms with the bone(s) each describes:
   a. long bone
   b. short bone
   c. flat bone
   d. irregular bone

   ..... clavicle ..... metatarsal
   ..... femur ..... rib
   ..... vertebra ..... humerus

2. Match each of the following terms with the statement which describes each:
   a. tendon
   b. ligament
   c. cartilage

   ..... holds bones to bones
   ..... supporting structure of trachea, nasal septum, outer ear
   ..... holds muscle to bone

3. List five signs and symptoms of fracture.

4. Which of the following injuries should be straightened under traction? (There may be more than one correct answer.)
   a. fracture of the femur
   b. fracture of the elbow
   c. dislocation of the wrist
   d. fracture of the knee
   e. dislocation of the shoulder

5. List the following in the order of priority of management:
   a. fractured tibia
   b. severe hemorrhage from the arm
   c. evisceration
   d. obstructed airway
   e. angulated femoral fracture

6. A 30-year-old man fractured his radius in a fall while ice skating at a local pond. You apply an airsplint to the forearm and bring him to the ambulance. It is a long drive to the hospital and after about 20 minutes, the patient begins complaining of pain and tingling in his fingers of the injured arm. What is the cause of the pain and tingling? What steps would you take to remedy the situation?

7. For each of the injuries listed, select the appropriate method of immobilization:
   a. rigid splint
   b. air splint
   c. pillow splint
   d. traction splint
   e. sling and swathe

   ..... anterior shoulder dislocation
   ..... forearm fracture
   ..... femoral fracture
   ..... elbow fracture
   ..... ankle fracture

8. Describe the advantages in the use of MAST for fractures of the pelvis.

9. You arrive at the scene of an automobile accident and you find a conscious, agitated 28-year-old male lying on the ground complaining of right thigh pain. There is a large blood stain over his anterior right thigh and his right femur appears to be deformed. His blood pressure is 80/60, and his pulse is 126. Describe the steps you would take in managing this patient.

Vocabulary

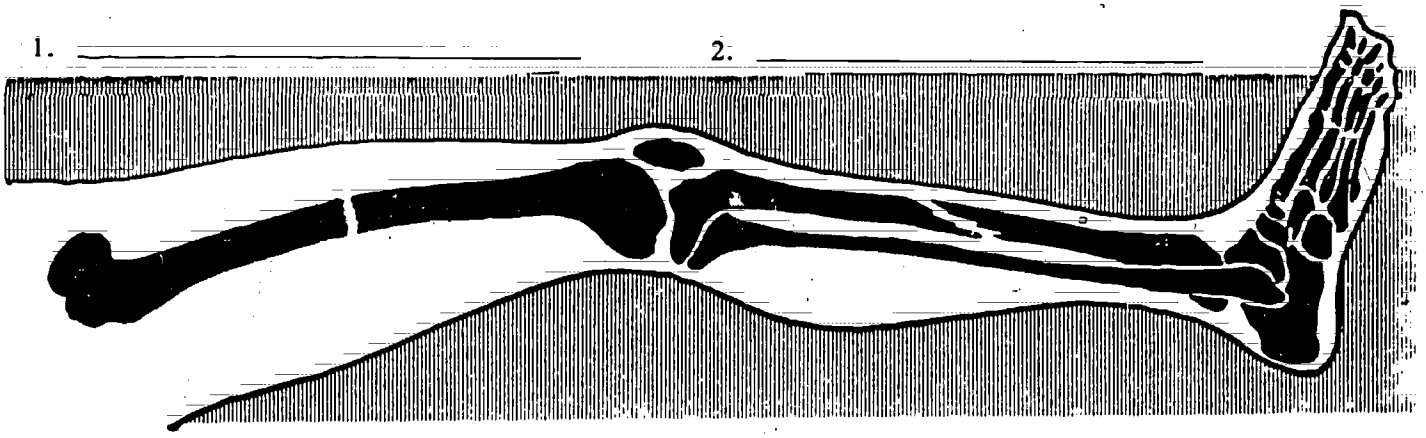
Test yourself on the following vocabulary words. For any meanings you don't know, refer back to the text or consult the glossary at the end of the book.

diaphysis
epiphysis
marrow cavity
periosteum
endosteum
tendon
crepitus
simple fracture
compound fracture
greenstick fracture
transverse fracture
spiral fracture
ligament
cartilage
fracture
sprain
dislocation
strain
ecchymosis
oblique fracture
comminuted fracture
impacted fracture
immobilization
alignment
splint
traction
windlass
sling
swathe
cravat
position of function
MAST

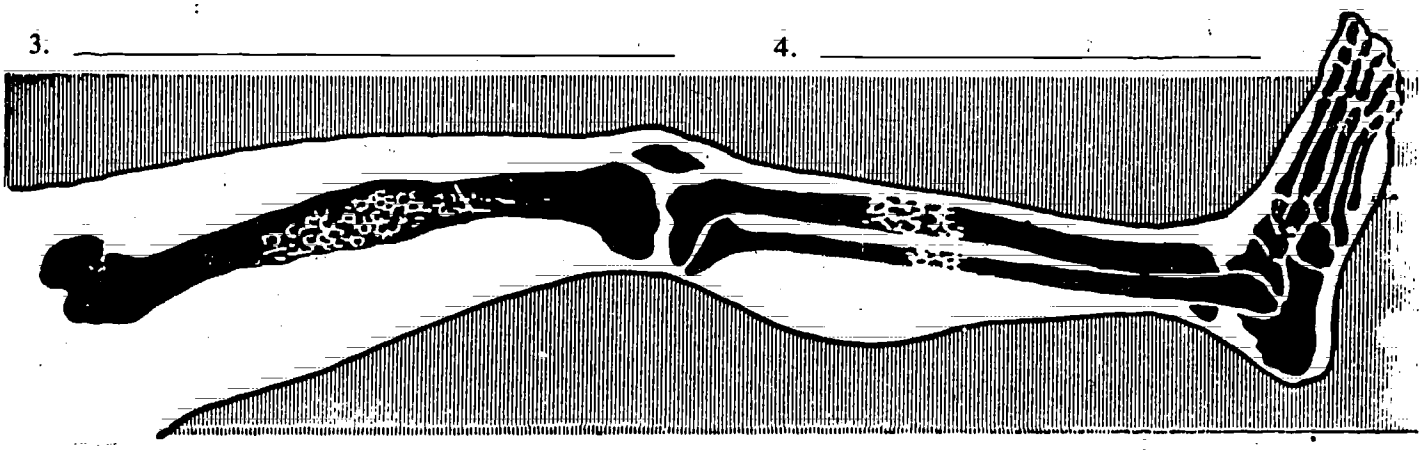
SELF-TEST (Module IX)

Fill in the blank spaces with the name of the fractures:

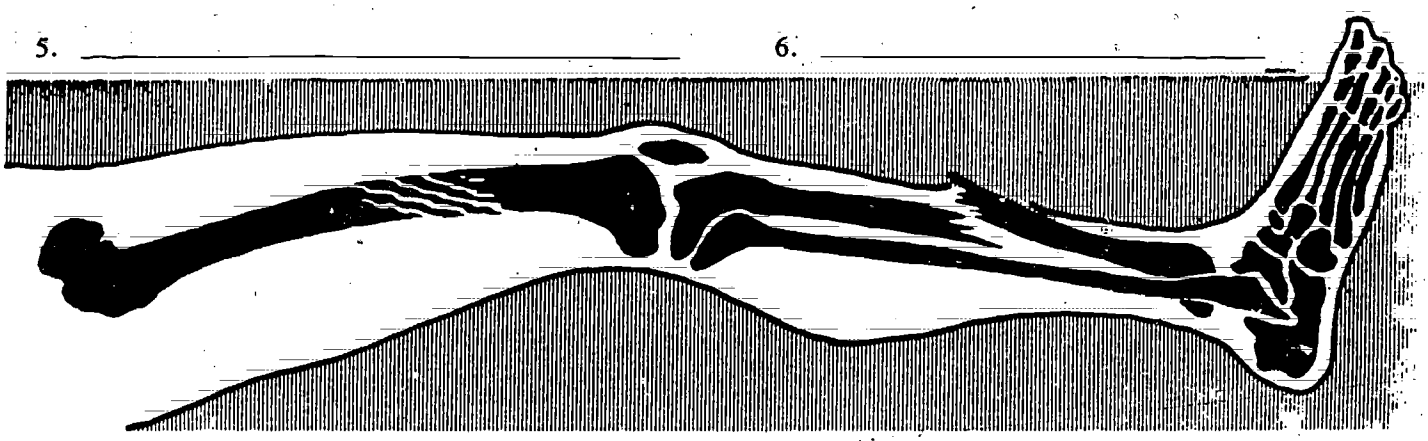
1. _____ 2. _____



3. _____ 4. _____



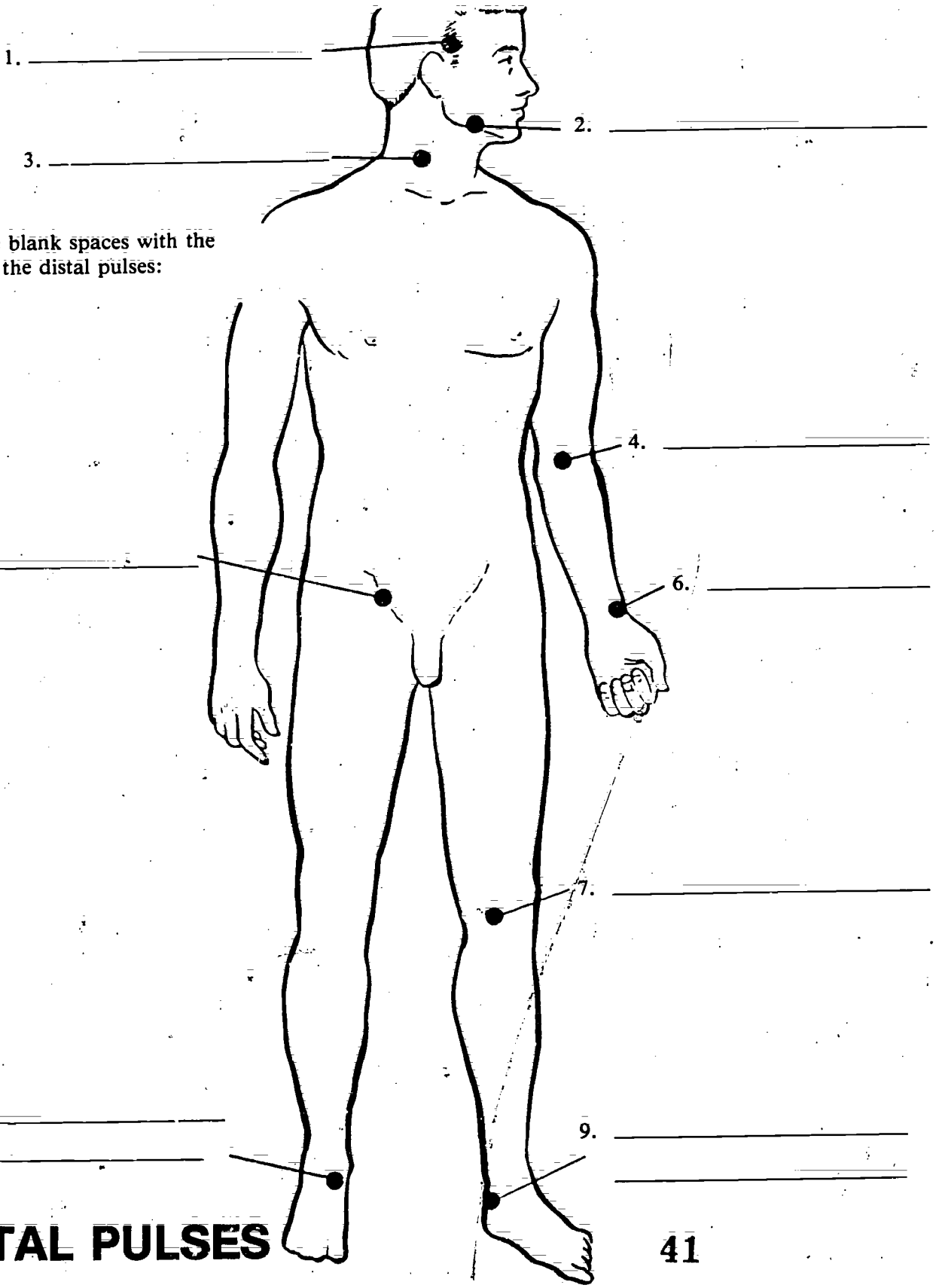
5. _____ 6. _____



COMMON TYPES of FRACTURES

SELF-TEST (Module IX)

Fill in the blank spaces with the names of the distal pulses:



DISTAL PULSES

41

Module X
Medical Emergencies
SELF-TEST

1. Match the following conditions to the signs and symptoms that help identify them:
   a. diabetic ketoacidosis
   b. hypoglycemic reaction
   ..... bizarre behavior
   ..... cold, clammy skin
   ..... polyuria
   ..... weak, thready pulse
   ..... overdose of insulin
   ..... excessive thirst
   ..... fruity odor on the breath
   ..... dry mucous membranes
   ..... incoordination
   ..... Kussmaul breathing
2. You are called to take care of a patient in coma. He is unknown to the bystanders, but he wears a medical alert tag stating that he is a diabetic. His vital signs are normal. Skin is somewhat moist. There is no evidence of head trauma, and his airway is patent. Describe your management of this patient.
3. Name two conditions other than insulin shock that may cause severe hypoglycemia.
4. You are called to see a 28-year-old man in severe distress. He tells you that he was stung by a yellow jacket about 10 minutes earlier, and began to itch on his arms and chest very soon thereafter. Now he is acutely short of breath, and complains of tightness in his chest. There is diffuse wheezing in both lung fields.
   a. What is the pathophysiology of the patient's symptoms?
   b. How will you manage this patient?
5. List five symptoms of anaphylactic shock.
6. Describe two mechanisms by which the body gets rid of excess heat.
7. Match the following conditions with the signs and symptoms that help identify them:
   a. heat exhaustion
   b. heat stroke
   ..... muscle cramps
   ..... coma
   ..... bounding pulse
   ..... salt depletion
   ..... hot skin
   ..... pallor
   ..... low or normal temperature
8. Describe two mechanisms by which the body defends itself against a drop in temperature.
9. Explain in what ways your management of the hypothermic patient in cardiac arrest differs from that of the normothermic patient in cardiac arrest.
10. A hiker who was stranded in a blizzard is found with frostbite of both feet. Describe the steps you would use in management of this patient.
11. List three ways in which alcoholism differs from "social drinking."
12. List three pathological conditions to which alcoholics are especially prone.
13. What clues might you look for in trying to determine whether a patient has an alcohol problem?
14. List four routes through which poisons may gain access to the body.
15. What information must you obtain in taking a history from a patient who has ingested a poison?
16. Induction of vomiting is contraindicated if the patient has ingested which three classes of poison?
17. List three patient conditions that contraindicate the induction of vomiting.
18. Activated charcoal should be administered (before, together with, or after) ..... syrup of ipecac.

19. If you are required to pass a nasogastric tube on a comatose patient, what preliminary step should you take?
20. A 3-year-old child has ingested an unknown quantity of lighter fluid. Describe how you will manage this patient?
21. Another child has swallowed Drano. How would you manage this patient?
22. A chronic alcoholic, unable to get to the liquor store, elected instead to satisfy his craving with a pint of antifreeze. What symptoms will he show and how will you manage him?
23. A 4-year-old child has eaten a very large quantity of apple seeds. He was found disoriented, sleepy, and gasping. What poisonous substance is involved, and how would you manage this problem?
4. A housewife has decided to winterize her home by caulking all the cracks around windows and doors, and in her zeal, sealed off the flue. However, the flue was the vent for her space heater. You are called by a neighbor when she observes the housewife stagger out of her dwelling in what appears to be a drunken state. What is the most likely cause of the housewife's problem, and how would you manage it?
25. A backpacker found himself face to face with an 8-foot-long snake that made a peculiar rattling noise with its tail. The snake failed to give ground to the hiker, and the man was bitten on his left forearm. Fortunately, the rescue unit was nearby and got to the man in 10 minutes. Describe how you, as lead man on the unit, will take care of the patient.
26. Your call is to a possible poisoning. When you arrive, you find that the patient is 3-years-old and is crying hysterically with hallucinations. An adult produces a sugar cube and reveals that LSD was being used by the patient's parents. The child seems to trust the adult who is holding him and seems to be calming down. What should you do now?
27. The child next door was found feverish and tachypneic. She vomited spontaneously and some pills were noted in her vomitus. What might she have ingested, and how will you treat her?
28. Your patient is a 21-year-old male who was found comatose by a friend. The friend says that the male had a long history of drug ingestion, including opiates, uppers, downers, and hallucinogens. At present the patient is breathing six times a minute, has a pulse rate of 110, and BP of 110/80. What precaution must you take if Narcan is ordered by the physician? What procedures will you undertake to determine the nature of the man's overdose?
29. A young man injured in a car-truck collision complains of severe lower abdominal pain. He tells you that he was on the way home from a beer party when the accident occurred. What questions must you ask to determine the possible cause of the abdominal pain?
30. Name three organs that are found in the left upper quadrant.
31. Your call is to a 54-year-old man who has been vomiting bright red blood for an hour. He is weak and pale, BP 80/50, pulse 120, respirations 28 and shallow. What pathological conditions can cause the massive hemorrhage, and how will you care for the patient?
32. Name five reactions to illness that are altered as a result of the patient being elderly.
33. Why is a history sometimes more difficult to obtain from elderly patients?
34. Your patient is an 80-year-old lady who is in acute respiratory distress, with respirations at 40 per minute. She is sitting on the edge of her bed, leaning forward. Her neighbor said that she has had heart trouble for 15 years and "takes a pill for her heart and a pill for her water." What is the most likely cause for her distress? What medications do patients with her problem most likely take? How can you help ease her distress?

Vocabulary

Check yourself on the following vocabulary words. For any meanings you do not know, refer to the text or check the glossary at the back of the book.

hyperglycemia
hypoglycemia
ketoacidosis
insulin
polyuria
polydipsia
polyphagia
anaphylaxis
urticaria
vasdilation
vasoconstriction
hypothermia
hyperthermia
intoxication
withdrawal
psychological dependence
habituation
tolerance
physical dependence
addiction
narcotic
hallucinogen
lavage
ethanol
methanol
venom
ingestant
speed
blue devil
yellow jacket
red devil
Mickey
coke
salicylate
peritoneum
quadrant
aneurysm
epigastrium
retroperitoneum
geriatric

Module XI
Obstetric/Gynecologic Emergencies
SELF-TEST

1. Arrange the following structures in the order by which they are traversed by the unfertilized egg (ovum) in the course of a menstrual cycle:
   a. cervix
   b. fallopian tube
   c. uterus
   d. vagina
   e. ovary

2. Match the following terms with the statement which describes each:
   a. fetus
   b. placenta
   c. amniotic sac
   d. umbilical cord
   e. presenting part

   ..... special organ of pregnancy, attached to the uterine wall, that nourishes the baby

   ..... rope-like attachment through which the infant receives nourishment

   ..... membranous bag surrounding the baby

   ..... developing baby before it is born

   ..... the part of the baby that comes out of the mother first

3. List at least three questions that you would ask in eliciting a history from a woman with abdominal pain.

4. Match the following terms with the statement which describes each:
   a. spontaneous abortion
   b. therapeutic abortion
   c. threatened abortion
   d. inevitable abortion
   e. incomplete abortion
   f. missed abortion

   ..... uterus expels part of the fetus, but retains some products of conception

   ..... bleeding and cramps during pregnancy

   ..... an abortion occurring naturally

   ..... a fetus that has died at less than 20 weeks gestation and is retained in the uterus for at least 2 months

   ..... an abortion induced for justifiable medical reasons

   ..... an abortion characterized by vaginal bleeding, uterine contractions, and cervical dilation

5. A 23-year-old mother of two is having contractions 2 minutes apart and lasting 30 seconds. She complains of an urge to move her bowels. Do you have time to transport her to the hospital, which is 15 minutes drive, or should you prepare for delivery at home?

6. After aiding in the delivery of a healthy baby, you notice that blood is oozing from the umbilical cord despite your clamp. What do you do in this situation?

7. At 60 seconds, a newborn baby has blue extremities but a pink trunk, a pulse of 90 per minute. It cries vigorously in response to stimulation and moves actively. What is the APGAR score? How will you treat the baby?

8. What are the only two situations in which the paramedic may place his or her hand in the mother's vagina?

9. You are called to attend a 26-year-old woman who is close to term and who complains of the sudden onset of severe, lower abdominal pain. She is pale and her skin is clammy. Her pulse is 120 and BP 82/50. Her abdomen is board-like to palpation. How would you manage this patient?

10. A 30-year-old woman in her 8th month of pregnancy calls for an ambulance because of severe headache. On physical examination, you note that her blood pressure is 180/120 and she has marked edema. What complications might you anticipate? Describe how you will manage this patient.

Vocabulary

Check yourself on the following vocabulary words. If there are any meanings you don't know, refer back to the text or consult the glossary at the end of the book.

ovary
ovum
fallopian tube
uterus
menstrual period
cervix
vagina
perineum
fetus
placenta
umbilical cord
amniotic sac
amniotic fluid
crowning
presenting part
cephalic delivery
breech delivery
labor
abortion
spontaneous abortion
therapeutic abortion
threatened abortion
inevitable abortion
incomplete abortion
missed abortion
preeclampsia
eclampsia
toxemia
APGAR score
prolapsed cord
limb presentation
abruptio placenta
placenta previa
PID
hysterectomy
oophorectomy
tubal pregnancy
Caesarean section
amniocentesis
primipara
multipara
gravid

Module XII
Pediatrics
SELF-TEST

1. Describe the age-related problems in management you might encounter in dealing with the 3-year-old injured in an automobile accident. What sort of fears will this child have? What can you do to calm the child?
2. You are called to care for an 18-month-old child who has aspirated a large piece of a toy construction set. When you arrive, she is conscious and struggling to breathe. Describe your management of this patient.
3. A 7-year-old boy is found in severe respiratory distress by his parents. The child has no history of similar episodes, but he has multiple allergies to foods and pollens. When you arrive, he is sitting upright, struggling to breathe. There are tight wheezes all over his chest. How would you manage this patient?
4. A 6-month-old child, who had been running a low grade fever for several days, is found by her parents coughing and wheezing audibly. On auscultation, you hear wheezes all over her chest. She is breathing about 40 times a minute. How would you manage this child?
5. Compare asthma and bronchiolitis in regard to age of the patient, signs, causes, medications, and treatment.
6. Explain the rationale for using each of the following drugs and treatments in the management of asthmatic attacks:
   a. oxygen
   b. epinephrine
   c. fluid therapy
   d. IPPB
7. You are called about 3:00 a.m. to see a 2-year-old child who seems to be barking in a most alarming fashion. His bleary-eyed mother states that this is the third night in a row that he has been like this, although he seems to be all right during the day. You find him laboring to breathe, with marked retractions of his intercostal and suprasternal regions. A shrill noise is present on his inspiration. How will you manage this patient?
8. A 6-year-old has been running a high fever for the past 36 hours. She says it hurts to swallow, and you notice that she is drooling. What potentially life-threatening condition might this child have, and how will you manage her?
9. Compare croup and epiglottis in regard to the age of the patient, causes, signs, medications, and treatment.
10. A 7-year-old child with a history of head trauma 1 year earlier is having seizures. The mother states that he had two seizures during the past half hour, and you witness another seizure while you are there. How would you manage this patient? If the child were experiencing seizures with a high temperature, how would your treatment differ?
11. List at least 10 signs of mental or physical injury that indicate child abuse.
12. Describe proper physical examination for a child that you suspect has been abused.
13. Your call is to a 6-year-old boy who was injured when his parents' car collided with a truck. The child is bleeding from a scalp laceration, and you notice an angulated forearm and a bruised, swelling thigh. He will not allow you to touch his abdomen. His cries become weaker as you splint his arm and leg. What complications must you suspect from these injuries? How will you deal with this child and his medical problems?
14. For each of the following, describe any differences in the technique of resuscitation in the infant with respect to the technique in the adult:
   a. technique of establishing an airway
   b. technique of ventilation
   c. number of ventilations per minute
   d. ratio of ventilations to compressions
   e. technique of cardiac compression (include hand position)
   f. number of cardiac compressions per minute
   g. defibrillation
   h. drug administration

Vocabulary

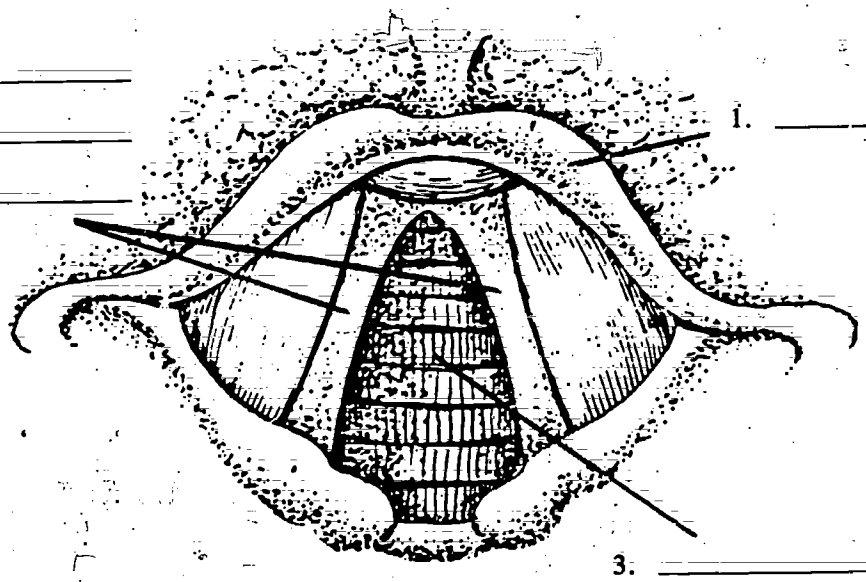
Test yourself on the following vocabulary words. For any meanings you don't know, refer back to the text or to the glossary at the end of the book.

aspiration
status asthmaticus
bronchoconstriction
hypercarbia
hypoxemia
acidosis
hyperresonance
wheezes
stridor
bronchodilator
bronchiolitis
croup
epiglottitis
laryngospasm
crib death
SIDS
status epilepticus
hematoma
glottis
oropharynx
"sniffing" position
febrile
laryngotracheobronchitis

SELF-TEST (Module XII)

Identify the parts by filling in blank spaces:

2. _____



1. _____

3. _____

THE VOCAL CORDS

Module XIII

Management of the Emotional Crisis

SELF-TEST

1. Describe five common responses that patients may have to serious illness or injury.
2. Describe five types of reaction to mass casualty and how you would deal with each.
3. List at least six guidelines you should observe in assessing the disturbed patient.
4. Under what circumstances may you take a patient to the hospital against his will?
5. List six causes of abnormal behavior other than mental illness.
6. You are called to attend a 23-year-old woman having an "anxiety attack." You find her surrounded by a crowd of agitated people, all demanding that you "do something." The patient is pacing back and forth. Her pulse is 120, respirations 40, and blood pressure 130/80. She complains of dizziness and tingling around the mouth. Describe how you would manage this situation.
7. The daughter of a 60-year-old woman calls you because her mother has been behaving strangely. She refuses to leave the house, but remains inside with all the blinds drawn. Further, she has locked her daughter outside and even taken the phone off the hook. You find that patient suspicious and reluctant to talk with you. When you suggest she should go to the hospital, she declares, "I can't go outside. Leave me alone." How would you manage this situation?
8. A woman calls you to deal with her 35-year-old husband, who is inside the house smashing the furniture. He became upset because he felt that his wife had been unfaithful to him. He wants no one to come near him, and states that anyone trying to approach him "will be sorry." How would you handle this patient?
9. You are summoned to attend a 30-year-old woman who was found by her mother sobbing unconsolably. When you approach the patient, she states that she wants to be be left alone, saying "It's hopeless anyway. There's nothing anyone can do to help." How would you deal with this patient?
10. A 27-year-old man phones the rescue unit and states that he is thinking of slashing his wrists. How would you handle this situation?
11. List five risk factors for suicide.
12. A 19-year-old man is found unresponsive by his parents. When you arrive on the scene, you find two 100-tablet, empty, aspirin bottles by his side, together with a note stating that life is no longer worth living. Describe how you manage this patient.
13. A woman calls you because her father has been behaving strangely. He has told her that the FBI and CIA are trying to kill him, and that voices on the radio have warned him to be prepared for danger. When you arrive he locks himself in his room, declaring that you are agents of the FBI and are trying to kill him. How would you deal with this patient?
14. You are called by a neighbor to see an elderly woman who has become "out of touch." According to the neighbor, the woman believes she is still living in her former home town and thinks that World War II is in progress. You find the patient pleasant but unable to furnish her married name, the date, or her present address. Describe how you would manage this patient.
15. A woman, near hysteria, calls because she is "afraid my husband might do something crazy." On arrival, you find the caller outside the house with her two children. She states that her husband is inside with a shotgun and is threatening to kill all of them. How would you manage this situation?
16. A middle-aged man is found wandering aimlessly in the middle of a busy intersection. He is wearing three overcoats even though it is midsummer. When you address him, his speech is garbled and incomprehensible. How would you manage this patient?

Vocabulary

Check yourself on the following vocabulary words. For any meanings you don't know, refer back to the text or consult the glossary at the end of the book.

depression
hostility
paranoia
anxiety
phobia
disorganization
disorientation
voluntary commitment
involuntary commitment
regression
dependency
apathy
denial
blind panic
overreaction
conversion hysteria
crisis
hallucination
delusion
suicide
homocide
nondirective
facilitation
confrontation
senility
neurosis
psychosis
schizophrenia
manic-depressive
mania

Module XIV
Extrication/Rescue Techniques
SELF-TEST

1. ..... True ..... False It is assumed by the developers of this textbook that at the paramedic training level the trainee will have already received training in extrication/rescue procedures and techniques as a requirement for EMT or EMT–A certification.

2. ..... True ..... False The Department of Transportation has published a training curriculum entitled "Crash Victim Extrication Training Course."

3. ..... True ..... False The geographic area where the paramedic serves does NOT have to be considered when deciding what type of training is required for extrication/rescue work.

4. ..... True ..... False The extent of training for extrication/rescue service can only be determined at a local level.

5. Which of the following hazardous conditions should the paramedic recognize and manage as a threat to the patient, the EMT, or bystanders? (There may be more than one answer.)

   ..... explosive materials
   ..... radioactive materials
   ..... traffic at the scene of an accident
   ..... fire
   ..... downed electrical wires
   ..... toxic materials
   ..... unstable vehicle or structure, e.g., an automobile on a ledge.

6. The patient carries and lifts that the paramedic should be able to demonstrate and that can be used in emergency and nonemergency situations are: (Select the correct answer.)

   a. pack-strap carry and seat carry
   b. traction blanket lift and seat carry
   c. traction blanket lift, seat carry, extremities carry, two-man lift, pack-strap carry, fireman's carry, and fireman's drag
   d. pack-strap carry, seat carry, two-man lift, and fireman's drag
   e. fireman's carry, fireman's drag, extremities carry, and seat carry
   f. fireman's carry, seat carry, and extremities carry.

7. Devices used for transporting the patient should include: (Fill in the blanks.)

   a. chair stretcher
   b. stokes basket
   c. _____
   _____
   _____
   d. _____
   _____

Module XV
Telemetry and Communications
SELF-TEST

1. What four points of information should the public have to properly access the local EMS system?
2. List the sequence of communications that is necessary to properly care for a patient requiring advanced life support.
3. List four alternative communications networks that may be used in a disaster situation.
4. List three causes of noise in a telemetry signal.
5. List five bits of information a dispatcher must obtain on a medical call.
6. What information should the dispatcher obtain and what action should he take in the following calls?

   a. A motorist phones from a highway pay phone to report an accident.

   b. A panic-stricken mother calls to ask for an ambulance to pick up her 5-year-old child who fell off the swing.

   c. A very excited middle-aged woman calls to say that her husband is sitting in the living room chair and she cannot awaken him.

   d. A passer-by calls from a pay phone and says there is a drunk lying face down in front of a local tavern.

   e. A highway patrolman calls to report a semi has jackknifed across the median of the highway, pinning two cars beneath it.

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