Name _____

Date _____ Score _____

ASSIGNMENT SHEET

CHAPTER 16: DIAGNOSTIC TESTS, X-RAYS, AND PROCEDURES

Unit 1: Diagnostic Tests

WORDS TO KNOW CHALLENGE

A. Word Search: Find the words hidden in the puzzle.

ALLERGY	NOTE	SYMPTOM
INJECTION	EOSINOPHIL	WHEAL
DILUTE	KIT	SYSTEMATIC
INTERPRET	HISTAMINE	VENOM
ANTIBODY	SERUM	GAUGE
HYPERSENSITIVE	ADRENALINE	TIME
EXTRACT	ITCH	SHOCK
CONTACT DERMATITIS		

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

UNIT REVIEW

A. True or False: Place a "T" for true or "F" for false in the space provided. For false statements, explain why they are false.

_____ 1. A positive allergic reaction to a skin test is shown by a raised area on the skin, called a wheal.

_____

_____ 2. Wheals are measured in inches.

_____

_____ 3. Reactions to scratch tests usually occur within the first 20 minutes.

_____

_____ 4. Intradermal tests are sometimes used by physicians to determine medicine sensitivity or immunization needs.

_____

_____ 5. The patch test is read after a 12-hour and a 20-hour time period.

_____

_____ 6. Cockroaches, their egg casings, and fecal matter are major sources of allergens in large cities.

_____

_____ 7. Patients may have allergies only from irritants such as tobacco smoke, perfumes, cleaning supplies, and paint fumes.

_____

_____ 8. Patients who have food allergies should read the content label of all foods and over-the-counter medications before ingesting.

_____

_____ 9. If a patient is to report a skin test reaction by phone after the usual time it should react, explain that the size of the wheal/welt should be compared to a well-known item.

_____

B. Fill in the Blank

1. _____ are utilized to determine allergic reactions in patients.
2. Desirable sites for the _____ test are the arms and back.
3. The _____ test is done to determine the cause of contact dermatitis.
4. In performing the intradermal test, the antigen is introduced into the dermal layer of skin in dosages of _____ to _____ by sterile technique.
5. For accurate test results, the expiration date of the _____ should be checked each time before use.
6. It may be necessary to _____ small children to perform skin tests successfully.
7. A life-threatening allergic reaction must be counteracted with an injection of _____ to prevent anaphylactic shock.
8. Symptoms of _____ initially include intense anxiety, weakness, sweating, and shortness of breath.
9. Patients refer to desensitizing injections of allergy serum as _____.
10. It is a good practice to alternate arms of patients who have frequent allergy serum injections to prevent _____.
11. The medical assistant's role in diagnostic tests and procedures is to _____ and _____ patients.

C. Matching: Match the term in column I with its description in column II.

COLUMN I	COLUMN II
_____ 1. Antibody	a. Released in allergic/inflammatory reactions
_____ 2. Immune	b. Of or pertaining to the whole body
_____ 3. Venom	c. Immunizing agent that produces antibodies
_____ 4. Histamine	d. Protected or exempt from a disease
_____ 5. Systemic	e. A protein substance carried by cells to counteract effects of an antigen
_____ 6. Antigen	f. Pertaining to tissue
_____ 7. Extract	g. A poisonous secretion
	h. A substance distilled or drawn out of another substance

Name _____

D. Short Answer

1. Describe patient education regarding allergy injections. _____

2. Explain how you would advise a new allergy patient about scheduling desensitizing injections and other instructions. _____

CASE STUDIES

Scenario 1

Mrs. Everhart brings her 7-year-old son to your office to be tested for allergies. He seems to be having a lot of difficulty with congestion, sneezing, and coughing. You will be administering the scratch test and have been told to watch the patient closely for any severe reactions. Almost immediately wheals begin to develop, and several swell to a 4+ in a very short period of time. Mrs. Everhart's son complains that his tongue feels big and he can't breath very well.

Critical Thinking Questions

1. Based on the skin reactions, what could be happening to the patient? _____

2. What will the physician most likely do to help the patient? _____

3. Why is the test not conclusive? _____

Scenario 2

Mrs. Leonard does not want to put her 4-year-old son through allergy testing by the scratch method. She is afraid that it will be too traumatic for him. Instead, the physician performs a nasal smear to determine if the child is suffering from allergies.

Critical Thinking Questions

1. How is this test performed? _____

2. What is being evaluated to determine if there are allergies present? _____

3. Is this test definitive for allergies? _____

UNIT APPLICATION

Performance Objective Practice

A. Practice performing allergy scratch tests with another student. Place marks of different sizes along your partner's forearm to simulate a reaction, and then write the name of the allergen beside the reaction zone. When you have finished labeling, go back and measure the simulated wheals and record the information as you would in a patient's chart.

B. Choose another student to be your patient and apply a patch test to his or her forearm using water to simulate the allergen. Give the patient instructions on proper care of the test area and instruct him or her to return to the office in 48 hours to have the test read.

Performance Competency

Following completion of performance objective practice, use the Performance Evaluation Checklists 16-1 and 16-2 in the workbook to perform the procedures for evaluation.

CERTIFICATION AND REGISTRATION PREPARATION

_____ 1. Which of the following is not *routinely* used to determine allergies in patients?
   a. Scratch test
   b. Intradermal test
   c. Patch test
   d. Nasal smear

_____ 2. Which of the following substances is responsible for the symptoms found in patients with allergies?
   a. Antibodies
   b. Blood cells
   c. Platelets
   d. Histamine

_____ 3. Following a desensitizing injection, patients should be observed for adverse reactions for how long?
   a. 60 minutes
   b. 45 minutes
   c. 30 minutes
   d. 20 minutes

_____ 4. Which of the following is thought to be a more accurate test for determining allergies?
   a. Intradermal
   b. Scratch
   c. Patch
   d. Nasal smear

_____ 5. Which of the following determines the cause of contact dermatitis?
   a. Patch test
   b. Intradermal test
   c. Scratch test
   d. None of the above

Name _____

Date _____ Score _____

ASSIGNMENT SHEET

CHAPTER 16: DIAGNOSTIC TESTS, X-RAYS, AND PROCEDURES

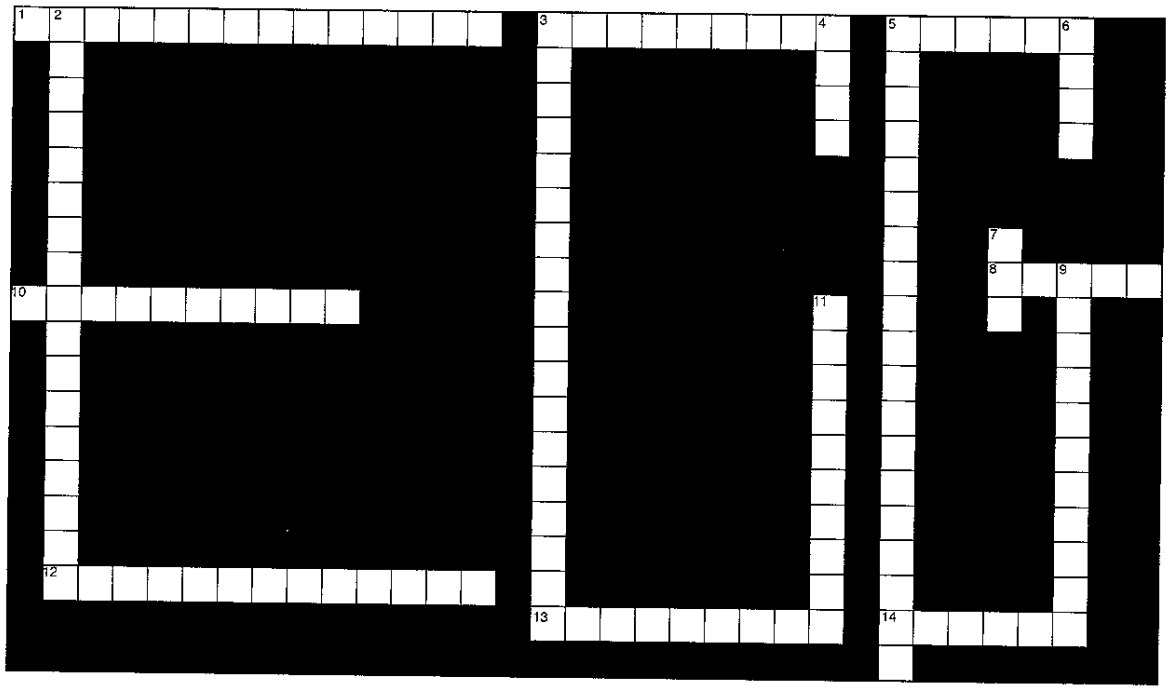
Unit 2: Cardiology Procedures

WORDS TO KNOW CHALLENGE

A. Matching: Match the term in column I with its description in column II.

	COLUMN I	COLUMN II
_____	1. Artifacts	a. Enlarged
_____	2. Somatic	b. Electrocardiogram
_____	3. Segment	c. Little activity
_____	4. Repolarization	d. Additional electrical activity
_____	5. Purkinje	e. Changes impulses into mechanical motion
_____	6. Augmented	f. Chest leads
_____	7. Sedentary	g. Difference in electrical potential
_____	8. Galvanometer	h. Fibers that cause muscles of the ventricle to contract
_____	9. Precordial	i. Momentary surge of current
_____	10. Voltage	j. Provides a reliable reading
_____	11. Interval	k. Muscle voltage artifacts
_____	12. Electrodes	l. Provides printed representations of ECG paper
_____	13. Standardization	m. Period when heart momentarily relaxes
_____	14. Impulse	n. Bectrolyte
_____	15. Stylus	o. Metal sensors that pick up electrical impulses
		p. Portion of ECG between two waves
		q. Length of a wave

B. Crossword Puzzle



ACROSS

1. Time of recovery before heart contracts again
3. Picks up electrical current from patient
5. Produces a printed representation on ECG paper
8. Precordial is another name for _____ leads
10. Irregular heartbeat
12. Ambulatory ECG
13. Inactivity
14. Slight/distant

DOWN

2. Instrument used to record electrical impulses of the heart
3. Permanent records of heart's electrical activity
4. An ECG tech does lots of these
5. This provides a basis for physicians to judge deviations from the standard
6. Immediately!
7. Acronym for electrocardiogram
9. Used to provide maximum electrical conduction
11. Study of the heart

UNIT REVIEW

A. Multiple Choice: Place the correct letter on the blank line for each question.

_____ 1. The ECG is interpreted by the _____.
   a. lab technician
   b. medical assistant
   c. physician
   d. nurse practitioner

_____ 2. The routine ECG consists of _____ leads.
   a. 6
   b. 10
   c. 8
   d. 12

_____ 3. The patient must be _____ for a good tracing to be obtained.
   a. sleeping
   b. standing
   c. relaxed
   d. unconscious

Name _____

_____ 4. Metal electrodes should be cleaned with _____.
   a. mild detergent/scouring powder
   b. alcohol/ether
   c. baking soda/water
   d. mild detergent/silver polish

_____ 5. A proper amount of _____ must be used with each metal electrode to provide maximum electrical conduction.
   a. alcohol
   b. electrolyte
   c. oil
   d. powder

_____ 6. The _____ of the ECG is necessary to enable a physician to judge deviations from the standard.
   a. length
   b. quality
   c. standardization
   d. augmentation

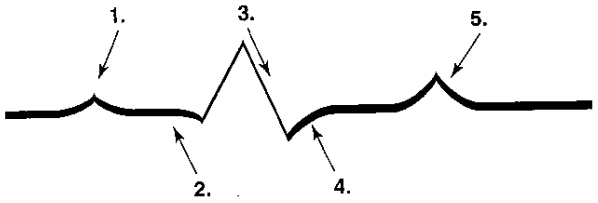
_____ 7. The usual standardization mark is _____ in size.
   a. 1 mm wide and 10 mm high
   b. 2 mm wide and 5 mm high
   c. 1 mm wide and 5 mm high
   d. 2 mm wide and 10 mm high

_____ 8. If the tracing is too large, the _____ button should be turned down to one half.
   a. sensitivity
   b. stylus
   c. selector
   d. on/off

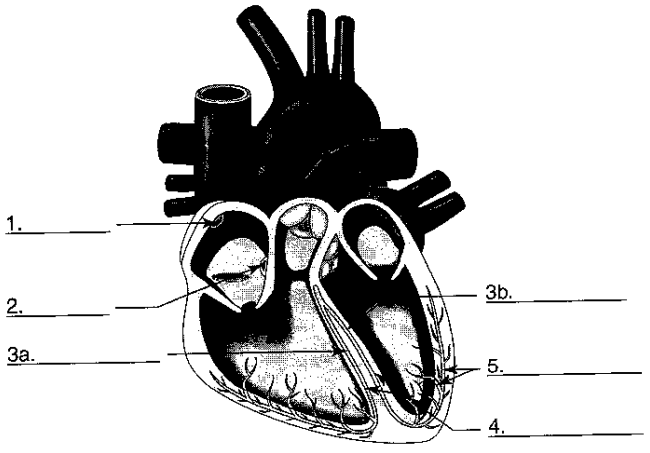
_____ 9. The tracing paper is normally run at a speed of _____ mm/second.
   a. 15
   b. 25
   c. 50
   d. 75

B. Labeling: Label these diagrams of the ECG cycle.

1. Place the correct letter for each wave of the ECG tracing on the line next to the number in the following.



2. Label the numbered lines below with the correct name of each area of the electrical conduction through the heart.



C. Fill in the Blank

1. All muscle movement produces _____.
2. The current enters the electrocardiograph through the wires to reach the _____.
3. The amplifier _____ the electrical impulses.
4. Electrical impulses are transformed into mechanical motion by the _____.
5. A(n) _____ produces printed representations on ECG paper.
6. An electrical impulse originates in the modified myocardial tissue in the _____.
7. The first impulse recorded on the ECG paper from the atrial contraction is known as the _____.
8. When the muscles of the ventricles contract, the _____ of waves is produced on the ECG paper.
9. During the recovery of the ventricles, the _____ is produced.
10. A routine ECG consists of _____ leads.
11. _____ means to make larger.
12. Chest leads are also called _____ leads.
13. AC or _____ current interference is caused by additional electrical activity.
14. The standardization mark is included in an EKG to provide a(n) _____ reading.

D. True or False: Place a "T" for true or "F" for false in the space provided. For false statements, explain why they are false.

_____ 1. In the electrical conduction system, the first area of the heart to receive the electrical impulse is the Purkinje fibers.

_____

_____ 2. Shivering from being nervous or cold can cause somatic tremor.

_____

_____ 3. A rhythm strip indicates to the physician the size of a patient's heart.

_____

_____ 4. For better electrode contact, the skin sites should be rubbed vigorously to increase circulation.

_____

_____ 5. For single- and multi-channel computerized electrocardiographs, you simply press "auto" to run a 12-lead ECG.

_____

_____ 6. It is necessary to shave dense chest hair for placement of electrodes.

_____

_____ 7. Stress test ECGs are performed routinely on all patients.

_____

_____ 8. A fetal monitor is a walking or 24-hour ECG.

_____

_____ 9. Patients should keep a diary of their activities and symptoms during a 24-hour electrocardiogram.

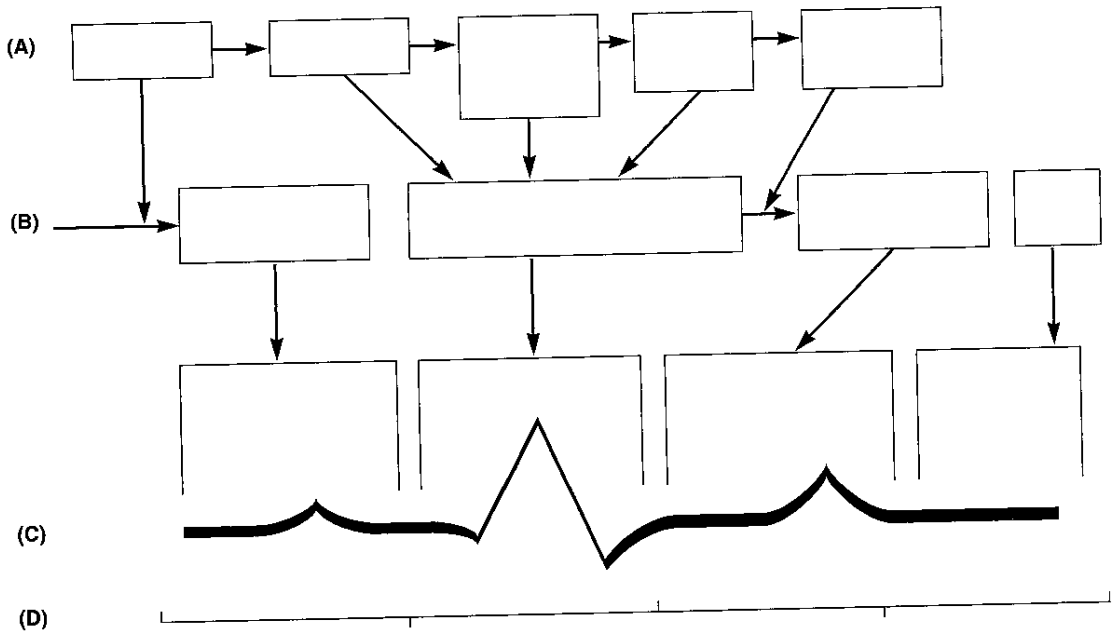
_____

_____ 10. It is important to check the batteries and proper working order of the Holter monitor before applying the device to a patient.

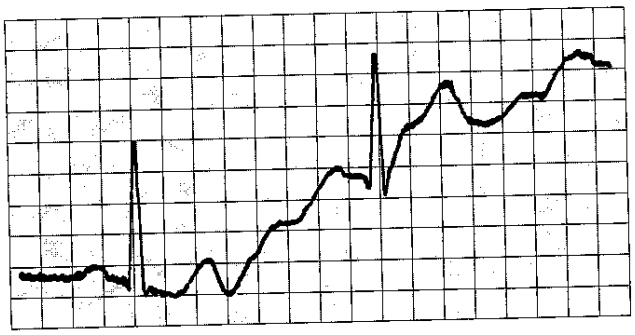
_____

Name _____

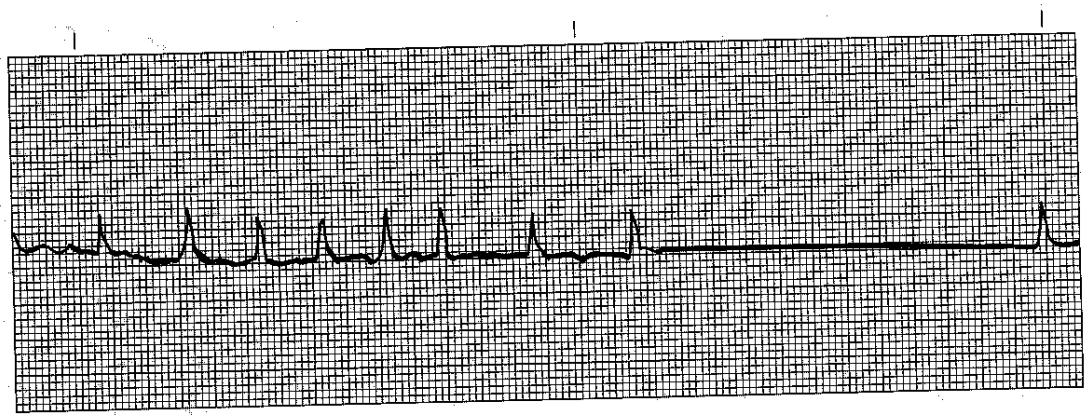
E. Labeling: Fill in the missing information from this diagrammatic representation of cardiac impulses on ECG tracing: (A) course of electrical impulses, (B) cardiac muscle reaction to impulses, (C) ECG tracing of impulse waves, (D) phases of cardiac cycle.



F. Labeling: Label the ECG tracings. Are they abnormalities or interference artifacts?

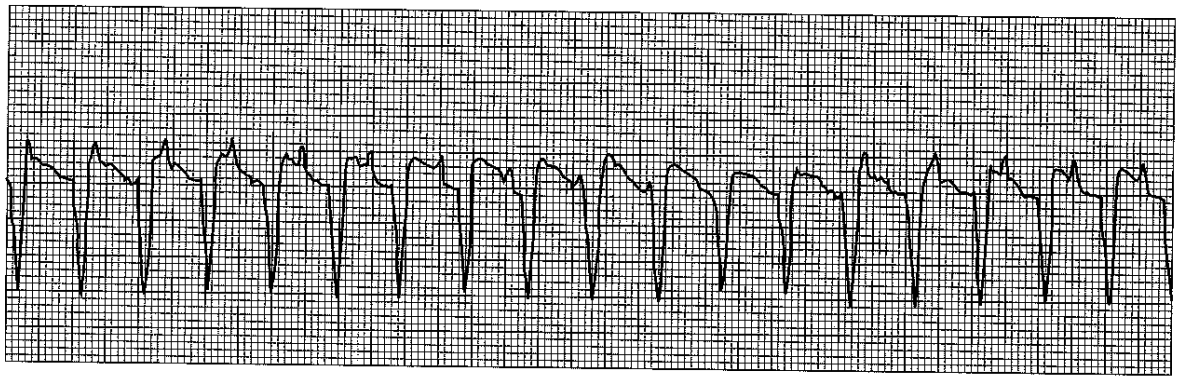


1. _____

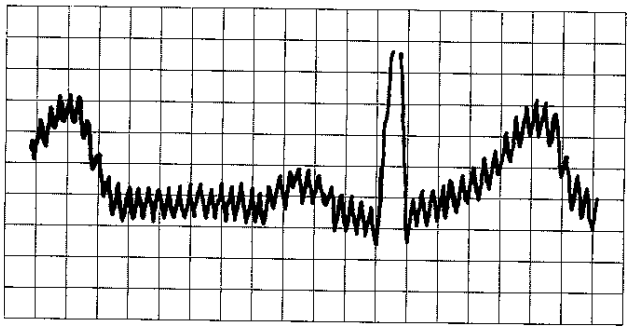


2. _____

3. _____

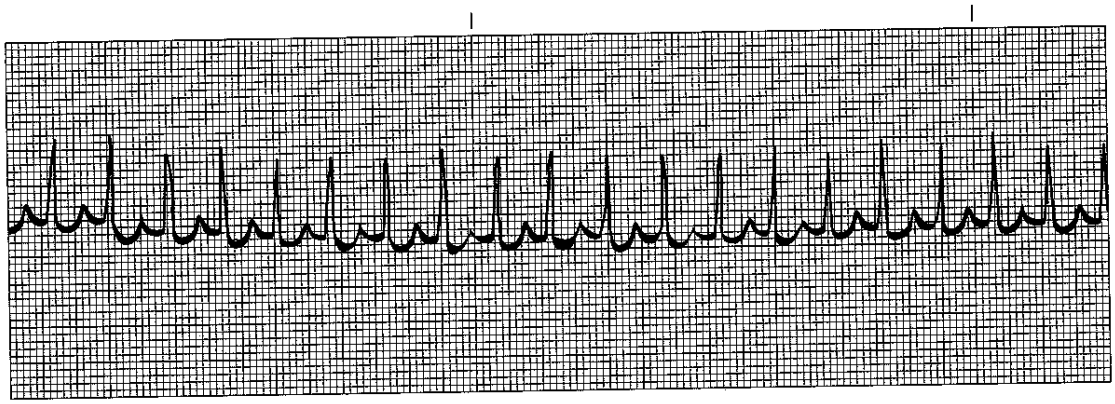


4. _____

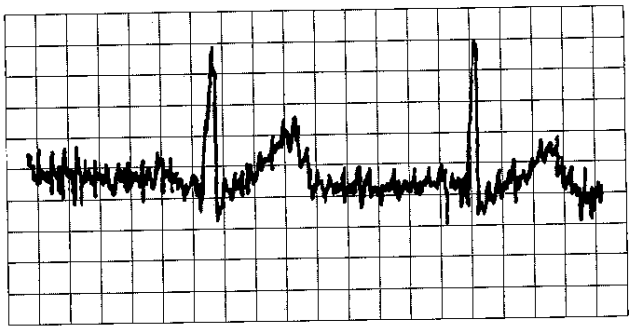


5. _____

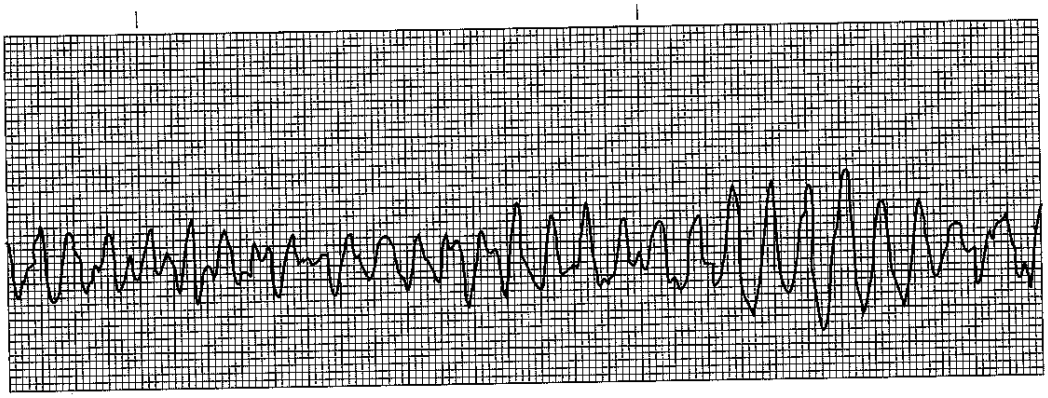
Name _____



6. _____



7. _____



8. _____

CASE STUDIES

Scenario 1

You are preparing to do an ECG on a female patient who appears to be very apprehensive about the procedure. She tells you that she has never had an ECG before and that she is fearful of all the wires and that she will receive an electric shock.

Critical Thinking Questions

1. What can you do to calm the patient's fears? _____
2. What should you do to ensure that the patient is calm and doesn't move during the procedure? _____
3. How will your treatment of this patient reflect on the practice? _____

Scenario 2

You have been asked to apply a Holter monitor to a 79-year-old male patient. The patient is slightly hard of hearing and is quite confused about this machine, which he has to take home and wear.

Critical Thinking Questions

1. What is the best way to explain the procedure to the patient? _____
2. What must be stressed to the patient so that a proper recording is obtained? _____
3. What can you do to ensure patient compliance? _____

UNIT APPLICATION

Performance Objective Practice

1. Practice placing chest leads on several different female classmates. Choose students of different sizes and with different sized breasts. In females with larger breasts, the landmarks for lead placement are sometimes more difficult to find than in those with smaller breasts.

2. If there are no male students in your class, ask a friend or family member if he would come to class and allow students to practice placing the chest leads on him. While practicing, explain what might have to be done to prepare the chest area to allow for proper contact between the skin and the electrode.
3. Choose another student to be your patient and practice hooking up the Holter monitor. Give the patient instructions about how to fill out the diary and any dos and don'ts about the monitor itself.

Performance Competency

Following completion of performance objective practice, use the Performance Evaluation Checklists 16-3 and 16-4 in the workbook to perform the procedures for evaluation.

CERTIFICATION AND REGISTRATION PREPARATION

_____ 1. What does the ECG measure?
   a. Strength of the heart muscle
   b. Contractions of the heart muscle
   c. Electrical impulses of the heart muscle
   d. Occurrence of a heart attack

_____ 2. Which of the following are the standard or bipolar leads?
   a. aVR, aVL, aVF
   b. I, II, III
   c. V1–V6
   d. All of the above

_____ 3. Which of the following carries the electrical impulse across the heart and causes the ventricles to contract?
   a. SA node
   b. AV node
   c. Bundle of HIS
   d. Purkinje fibers

_____ 4. Which part of the ECG complex is formed when the atria contract?
   a. QRS
   b. P
   c. T
   d. U

_____ 5. Which lead records the right leg?
   a. I
   b. II
   c. III
   d. None of the above

_____ 6. There is interference in Lead I on the ECG tracing. Which electrodes would you check first?
   a. LL and RA
   b. LL and LA
   c. LA and RA
   d. LL and RL

_____ 7. Which of the following denotes the marking code for lead V3?
   a. • • •
   b. – – –
   c. – • • •
   d. • • • –

_____ 8. If the patient is cold, which type of interference may appear on the ECG tracing?
   a. AC
   b. Somatic
   c. Wandering baseline
   d. Interrupted baseline

_____ 9. Which of the following measurements denotes the usual standardization of an ECG machine?
   a. 2 mm wide and 10 mm high
   b. 4 mm wide and 20 mm high
   c. 1 mm wide and 5 mm high
   d. 10 mm wide and 2 mm high

_____ 10. If the ECG cycles are too close together, the speed should be changed to:
   a. 50 mm/sec
   b. 10 mm/sec
   c. 25 mm/sec
   d. 30 mm/sec

Name _____

Date _____ Score _____

ASSIGNMENT SHEET

CHAPTER 16: DIAGNOSTIC TESTS, X-RAYS, AND PROCEDURES

Unit 3: Diagnostic Procedures

WORDS TO KNOW CHALLENGE

A. Word Search: Find the words hidden in the puzzle.

TEST	PATIENT	IMPLANTS
CONTRAST	ECHOES	MAGNETIC
EARLY	CLAUSTROPHOBIA	IMAGE
POLYPS	SPIROMETER	SONOGRAM
INVASIVE		

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

B. Word Scramble: Unscramble the following terms.

1. _____ T R E E L C G N O M E T I A C
2. _____ I E O A N N V N V I
3. _____ C A D O I I N G S T
4. _____ S R O N O A M G
5. _____ C R Y C O O P E H I H A R G A D
6. _____ S T R A I B L U H O P A O C
7. _____ L O O P S S C C I L O E
8. _____ P R I M E O S R E T
9. _____ N A U R D C E R S T
10. _____ G A I N C E M T

UNIT REVIEW

A. Fill in the Blank

1. Vital capacity should equal _____ capacity plus _____ reserve.
2. _____ mouthpieces are used with vital capacity tests to prevent disease transmission.
3. Advising patients to list their concerns and bring them to their next appointment will _____ the number of phone consultations.

4. In the performance of procedures, the medical assistant must be aware of explaining what is _____ of the patient, for cooperation is essential in successful completion of the procedure.
5. As a(n) _____, patients should be made aware of the expected amount of time a procedure will take so that their transportation can be planned accordingly.

B. Matching: Match the term in column I with its description in column II.

COLUMN I	COLUMN II
_____ 1. Dyspnea	a. Coming and going
_____ 2. Maturity	b. The prolongation of sound by reflection
_____ 3. Ultrasound	c. Breathing out; exhaling air
_____ 4. Intermittent	d. Fear of being enclosed
_____ 5. Spirometry	e. Yields more accurate test results
_____ 6. Resonance	f. Full development
_____ 7. Expiration	g. Difficulty breathing
_____ 8. Patient education	h. Measures hearing
_____ 9. Claustrophobia	i. Measurement of air capacity of lungs
	j. Vibrations of sound waves

C. True or False: Place a "T" for true or "F" for false in the space provided. For false statements, explain why they are false.

_____ 1. In the spirometry procedure a clip is placed on some patients' noses to encourage them to breathe in deeply through the mouth.

_____

_____ 2. One of your important duties in performing spirometry is to coach patients to quickly and completely expel all the air from their lungs.

_____

_____ 3. An oscilloscope is an instrument that shows a picture of converted electrical impulses from the patient during echocardiography.

_____

_____ 4. High-frequency sound waves are conducted through the use of a transducer in ultrasonic scanning.

_____

_____ 5. Thermography is a measurement of heat patterns given off by the skin.

_____

_____ 6. Diaphanography is performed by transillumination.

_____

CASE STUDIES

Scenario 1

Mrs. Anthony is scheduled to have a vital capacity test performed at 10:00 A.M. You have been assigned to administer the test. Mrs. Anthony has been experiencing difficulty breathing and shortness of breath and has been taking medication, but has had no improvement. After you explain the procedure to Mrs. Anthony, she begins the test and has quite a bit of difficulty expelling the air from her lungs without coughing.

Name _____

Critical Thinking Questions

1. What information should you have obtained from the patient before beginning the test? _____
2. What could be causing her difficulty during the test? _____
3. How can this type of problem be prevented in the future? _____

Scenario 2

Cynthia needs to be scheduled for an MRI of her head and neck. You are responsible for scheduling the test and for explaining the procedure to the patient. Once you have explained the procedure to Cynthia she tells you that she is extremely claustrophobic and doesn't think she can have the MRI.

Critical Thinking Questions

1. What special preparation instructions should be given to the patient? _____
2. To whom should you relay the information regarding the patient's claustrophobia? _____
3. What could be done to help combat the claustrophobia? _____

UNIT APPLICATION

Performance Objective Practice

1. Role play with another student and practice being both the medical assistant and the patient. Explain the spirometry procedure to the patient and give explicit instructions about how the patient is to perform the test.
2. Make a list of all things that could interfere with an accurate reading from a vital capacity test.

Performance Competency

Following completion of performance objective activities, use the Performance Evaluation Checklist 16-5 in the workbook and perform the procedures for evaluation.

CERTIFICATION AND REGISTRATION PREPARATION

_____ 1. Prior to performing a vital capacity test, which of the following information should be obtained from the patient?
   a. Height
   b. Weight
   c. Vital signs
   d. All of the above

_____ 2. Which of the following would be a sign of distress during a vital capacity test?
   a. Dizziness
   b. Tearing of the eyes
   c. Coughing
   d. None of the above
   e. Both a and c

_____ 3. In which of the following situations does the MRI become an invasive procedure?
   a. If the brain is scanned
   b. If the colon is scanned
   c. If an intravenous contrast medium is used
   d. If an ultrasound is used

_____ 4. Which of the following could not be worn during an MRI?
   a. Mascara
   b. Clothing
   c. Hair spray
   d. Shoes

_____ 5. On which of the following patients would an MRI be contraindicated?
   a. A patient who has had a CVA
   b. A patient who has a pacemaker
   c. A patient who has an artificial knee joint
   d. None of the above
   e. Both b and c

Name _____

Date _____ Score _____

ASSIGNMENT SHEET

CHAPTER 16: DIAGNOSTIC TESTS, X-RAYS, AND PROCEDURES

Unit 4: Diagnostic Radiological Examinations

WORDS TO KNOW CHALLENGE

A. Word Puzzle: Use the *Words to Know* to spell out these terms.

1. _ _ _ M _
2. _ _ _ _ _ _ A _ _ _
3. _ _ M _ _ _ _ _ _ _ _
4. _ _ _ _ _ M
5. _ _ _ O _ _ _ _ _ _ _
6. _ _ _ _ _ G _ _ _ _
7. _ _ _ _ R _ _ _
8. _ _ _ _ _ A _ _ _ _ _
9. P _ _ _ _ _
10. _ H _ _ _ _ _ _ _ _ _
    Y

B. Spelling: Underline the correctly spelled word.

1.	compresion	compresstion	compression
2.	flexable	flexible	flexeble
3.	mammography	mammographey	mamographey
4.	radioactiv	radioactive	readeoactiv
5.	electrodemagnetic	electrowmagnetic	electromagnetic
6.	conjunction	conjunktion	conjuncstion
7.	fluroscope	flooroscope	fluoroscope
8.	retrograde	retroegrade	retrograid
9.	thareputic	theraputic	therapeutic
10.	radiopaqe	radiopaiqe	radiopaque

UNIT REVIEW

A. Short Answer

1. What are roentgen rays? _____

_____

_____

2. What are therapeutic X-rays used for? _____

_____

3. What types of symptoms do patients experience if the gallbladder malfunctions? _____

_____

_____

4. What food should patients avoid if they have gallbladder trouble? _____

5. Why must the digestive tract be free of foods during an upper GI series? _____

6. Why is air contrast sometimes ordered with a barium enema examination? _____

7. What is an IVP? _____

8. What is another term for KUB? _____

9. How are patients X-rayed for mammography? _____

10. Describe the method of radiology called a CAT (computerized axial tomography) scan. _____

11. Describe echocardiography. _____

12. List the steps to prepare patients for a barium enema. _____

13. Describe a barium swallow or upper GI series. _____

14. Explain why pregnant women should not have X-rays. _____

15. List X-ray procedures that do not require patient preparation. _____

Name _____

B. Matching: Match the term in column I with its description in column II.

COLUMN I	COLUMN II
_____ 1. Therapeutic X-rays	a. Defines structures of the urinary system
_____ 2. Mammography	b. Do not require patient preparation
_____ 3. Evacuants	c. Barium and water mixture
_____ 4. UGI series	d. Flat plate of abdomen
_____ 5. CAT scan	e. Breast self-examination
_____ 6. Bone studies	f. Performed with sterile catheter in conjunction with cystoscopy
_____ 7. IVP	g. Laxatives and enemas
_____ 8. KUB	h. X-ray of different angles of breast tissue
_____ 9. Contrast media	i. Used to treat cancer
_____ 10. Retrograde pyelogram	j. Generates images of tissue in slices about 1 centimeter thick
	k. Barium swallow

C. Multiple Choice: Place the correct letter on the blank line for each question.

_____ 1. A diagnostic aid frequently requested by physicians that needs no patient preparation is the:
a. IVP
b. chest X-ray
c. UGI
d. cholecystogram

_____ 2. Diagnostic X-rays are _____ in pregnant female patients, especially during the first trimester.
a. contraindicated
b. indicated
c. important
d. common

_____ 3. Carbonated and alcoholic beverages should be avoided prior to X-rays of the visceral organs because they produce
a. rashes
b. stones
c. delays
d. flatus

_____ 4. A voiding cystogram may be ordered along with a(n)
a. UGI
b. KUB
c. IVP
d. BaE

_____ 5. Nuclear medicine is the branch of medicine that uses _____ in the diagnosis and treatment of patients.
a. xeroradiography
b. radionuclides
c. radioactive materials
d. both b and c

_____ 6. Which X-ray is helpful in determining the position of an IUD?
a. IVP
b. UGI
c. MRI
d. KUB

_____ 7. Breast self-examination is recommended for women of all ages
a. daily
b. weekly
c. monthly
d. yearly

_____ 8. All women should have a baseline mammography between the ages of
a. 25 and 39
b. 35 and 39
c. 45 and 49
d. 55 and 59

_____ 9. To reduce the possible effects of swelling and soreness often caused by compression of the breasts during mammography, you should instruct the patient to omit _____ from their diets 7 to 10 days prior to the examination.

a. salt
b. caffeine
c. fats
d. cholesterol

_____ 10. Compression of the breasts during mammography allows a much clearer picture of breast tissue and also requires less

a. analgesics
b. time
c. radiation
d. flatus

CASE STUDIES

Scenario 1

A 55-year-old male calls the office to say that he had a barium enema this morning. He says that he is nauseated, bloated, and constipated and wants to know what he should do.

Critical Thinking Questions

1. Can you tell the patient what he should do about his situation? _____
2. Who will determine how to treat the patient's complaint? _____
3. What can you tell the patient that may help in the meantime? _____

Scenario 2

A 35-year-old female with upper-right quadrant pain is scheduled for an ultrasound this morning. When she arrives at the facility, she is questioned about her prep for the procedure, and it is determined that she cannot have the ultrasound because she ate a liquid, fat-free breakfast. The patient calls your office and is quite upset because she had to reschedule her appointment. She claims that the medical assistant never told her that she could not have anything to eat or drink after midnight. However, the medical assistant did explain all preparation instructions and gave her printed instructions to take home with her.

Critical Thinking Questions

1. What could have happened with regard to the preparation instructions? _____
2. How might this situation be handled in a professional manner? _____
3. How might this error have been prevented? _____

Name _____

UNIT APPLICATION

Research Activities

A. Make a set of flash cards with the name of a radiological procedure on one side and patient prep instructions on the other. Use the cards to study and to quiz your classmates.

B. Contact a local radiological center and ask if you can observe for part of the day. Try to see as many special procedures (barium swallow, barium enema, fluoroscopy, IVP, etc.) as you can. Take notes and write a short paper about your experience to present to the class.

C. Since many radiological procedures are being phased out, research using the Internet and see what information you can find about new imaging techniques.

CERTIFICATION AND REGISTRATION PREPARATION

_____ 1. Another name for an X-ray is:
   a. xerox ray
   b. roentgen ray
   c. electromagnetic field
   d. radioactive energy

_____ 2. Which of the following is the term for gallbladder X-rays?
   a. Cholecystogram
   b. Gallbladder series
   c. Double dose gallbladder
   d. All of the above

_____ 3. If an X-ray is taken with the patient's back to the film, it is called:
   a. PA
   b. AP
   c. neither a nor b
   d. both a and b

_____ 4. Which of the following is most often used to diagnose the presence of gallstones?
   a. Ultrasound
   b. MRI
   c. CT scan
   d. Cholecystogram

_____ 5. When air is used along with barium for an X-ray, the study is known as:
   a. contrast
   b. two contrast
   c. double contrast
   d. contrast medium

_____ 6. If a patient is scheduled for her first IVP, what test should be conducted first?
   a. KUB
   b. CT scan
   c. MRI
   d. Iodine sensitivity test

_____ 7. Which branch of medicine uses radionuclides for diagnosing and treating diseases?
   a. Radiology
   b. Nuclear medicine
   c. Uptake scans
   d. Radioactive dispersion