

Practice Exam Questions



CV-BC

Cardiac Vascular Nursing



EXAMKILLER

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Total Question: 277 QAs

Question No: 1

A patient presents with pulmonary edema, tachypnea, tachycardia, hypertension, fever, and cough with frothy sanguineous sputum. What treatments are most commonly ordered initially with this clinical presentation?

- A. Oxygen, nitroglycerine, loop diuretics, and morphine.
- B. Oxygen, thiazide diuretics, and angiotensin-converting enzyme inhibitors.
- C. Oxygen and thiazide diuretics.
- D. Oxygen, morphine, and calcium channel blockers.

Answer: A

Explanation: The most common initial treatment of acute pulmonary edema is oxygen to relieve dyspnea, nitroglycerine to reduce preload, loop diuretics (usually furosemide-Lasix) to promote diuresis and venodilation, and morphine to reduce associated anxiety (although some physicians avoid morphine because of side effects). Angiotensin-converting enzyme inhibitors are also sometimes used to reduce afterload, but thiazide diuretics are not used to treat acute pulmonary edema. Calcium channel blockers may induce acute pulmonary edema if used with tocolytics.

Question No: 2

An 86-year-old patient with end-stage cardiac disease has a do-not-resuscitate (DNR) order as a result of an advance directive and has been explicit about her desire to avoid life-prolonging procedures. However, when she goes into cardiac arrest, her daughter demands that the nurses perform cardiopulmonary resuscitation (CPR). In this situation, the staff should do which of the following?

- A. Proceed with CPR as the patient can no longer make decisions.
- B. Proceed with CPR while calling the patient's physician to request verification of the DNR order.
- C. Contact the ethics committee for guidance.
- D. Advise the daughter that a valid DNR order is in place and that CPR will be withheld in accordance with the patient's wishes.

Answer: D

Explanation: The daughter should be advised that cardiopulmonary resuscitation must be withheld in accordance with the advance directive and desires of the mother. A valid do-not-resuscitate order is in place and does not require verification. Family members often panic at the time of death and want to institute life-saving measures against the wishes of the patient, but this does not override the patient's explicit directions. The staff should provide emotional support for the family. While this is an ethical issue, there is no time to contact an ethics committee.

Question No: 3

A patient with ventricular tachycardia at 200 bpm and multiple premature ventricular contractions loses consciousness. What treatment is most common in this situation?

- A. Antiarrhythmic medications.
- B. Emergency defibrillation.
- C. Digoxin.
- D. Procainamide.

Answer: B

Explanation: Emergency defibrillation is usually performed in patients with ventricular tachycardia (VT) who are also unconscious. Ventricular tachycardia is characterized by three or more premature ventricular contractions in a row and a ventricular rate of 100–200 bpm. The rapid rate of contractions makes VT dangerous as the ineffective beats may render the person unconscious with no palpable pulse. A detectable rate is usually regular and the QRS complex is ~0.12 seconds and (often) abnormally shaped. The P wave may be undetectable with an irregular PR interval if the P wave is present. The P:QRS ratio is difficult to ascertain if the P wave is missing.

Question No: 4

The nurse notes that a patient who has just had cardiac surgery has decreased chest tube drainage, muffled heart sounds, tachycardia, and pulsus paradoxus. The most probable cause of these symptoms is:

- A. fluid overload.
- B. cardiac failure.
- C. cardiac tamponade.
- D. infection.

Answer: C

Explanation: Cardiac tamponade may result in decreased chest tube drainage, muffled heart sounds, tachycardia, pulsus paradoxus, and decreased urinary output. The pulmonary artery wedge pressure, central venous pressure, and pulmonary artery diastolic pressure equalize. The cause is fluid accumulating in the pericardial sac, compressing the heart. In some cases, it can be caused by kinks or obstructions in the drainage tube. These tubes may be gently milked to remove obstructions, but the nurse should avoid the creation of negative pressure (through stripping), which can damage the surgical site.

Question No: 5

Ischemia is characterized on the electrocardiogram by:

- A. elevation of ST segments and elevated symmetrical T waves.
- B. inverted T waves.
- C. development of Q or QS waves.
- D. abnormal Q waves or decreased elevation of R waves without alteration of ST and T waves.

Answer: B

Explanation: Ischemia is characterized by inverted T waves. As the cardiac muscle is damaged, the ST segment is elevated, with elevated symmetrical T waves. With a Q wave myocardial infarction, Q or QS waves develop as repolarization is altered or absent. Changes in the Q waves are usually permanent, so an old myocardial infarction (MI) is evidenced by abnormal Q waves or decreased elevation of the R waves without alterations of ST and T waves. A non-Q wave MI does not cause Q wave changes.

Question No: 6

A patient complains of sharp pain in the substernal area or to the left of the sternum, which is referred to the neck, arms, and back. It occurs intermittently and suddenly, and increases in intensity with inspiration, coughing, swallowing, or turning of the trunk. It is somewhat relieved by sitting upright. The most likely diagnosis is:

- A. angina.
- B. myocardial infarction.
- C. anxiety.

D. pericarditis.

Answer: D

Explanation: The sudden onset of intermittent substernal pain that is referred to the neck, arms, and back is typical of pericarditis. Angina pain, usually related to exertion, lasts 5-15 minutes and is substernal or retrosternal, radiating across the chest and sometimes to the inside of the arm, neck, or jaw.

Myocardial pain lasts over 15 minutes and occurs spontaneously or after an episode of unstable angina. It is substernal or over the pericardium. It may spread across the chest and into the shoulders and hands. Anxiety pain lasts 2-3 minutes and tends to occur across the chest but does not radiate; however, some patients complain of numbness of the hands and mouth.

Question No: 7

If a patient has an ankle systolic pressure of 90 and a brachial systolic pressure of 120, what is the ankle-brachial index?

- A. 0.75.
- B. 1.33.
- C. 0.13.
- D. 7.5.

Answer: A

Explanation: An ankle systolic pressure of 90 divided by a brachial systolic pressure of 120 equals 0.75. Blood pressure at the ankle should be equal to or slightly higher than that of the arm. With peripheral arterial disease, the ankle pressure falls. The degree of disease relates to the score:

- >1.2: Abnormally high, may indicate calcification of vessel wall
- 1.0-1.2: Normal
- 0.90-0.99: Lower than normal, but acceptable
- 0.80-0.89: Likely some arterial disease present
- 0.50-0.79: Moderate arterial disease, associated with intermittent claudication
- <0.50: Severe disease, ischemia

Question No: 8

Which heart sound indicates atrial gallop, which is often associated with left ventricular hypertrophy, hypertension, or aortic stenosis?

- A. S1.
- B. S2.
- C. S3.
- D. S4.

Answer: D

Explanation: S4 is an extra beat (atrial gallop), occurring just before S1 and producing a triple "Tennessee" rhythm. It is often associated with left ventricular hypertrophy, hypertension, or aortic stenosis. S1 and S2 are normal heart sounds. S1 indicates the onset of systole with closure of both the tricuspid and mitral valves. S2 is the end of systole and indicates closure of the pulmonary and aortic valves. S3 is an extra beat, producing a triple rhythm ("Kentucky"), and indicates decreased ventricular compliance, often related to left ventricular failure and mitral regurgitation.

Question No: 9

Anticoagulation therapy should be given before which of the following procedures?

- A. Emergency defibrillation.
- B. Direct current cardioversion.
- C. Direct current and chemical cardioversion.
- D. Chemical cardioversion.

Answer: C

Explanation: Anticoagulation therapy is given before direct current cardioversion and also before chemical cardioversion in most cases. There is no time to start anticoagulation when emergency defibrillation is needed. With fibrillation, blood clots may form within the heart, and when the pulse rate converts to normal, these clots can travel, increasing the risk of heart attack or stroke; thus, the patient is usually maintained on anticoagulation (commonly warfarin [Coumadin]) for up to six months after cardioversion.

Question No: 10

Is a person who drinks heavily on one occasion in danger of cardiovascular impairment?

- A. No, only chronic drinking leads to cardiovascular impairment.
- B. Yes, but only if there is underlying cardiac disease.
- C. Yes, but only if alcohol use is combined with drugs, such as cocaine.
- D. Yes, drinking heavily on one occasion can cause cardiovascular impairment.

Answer: D

Explanation: Drinking heavily on only one occasion can result in cardiovascular impairment. While the effect of alcohol on the heart is more severe if there is underlying cardiac disease, an overdose of alcohol even with no underlying disorder weakens cardiac contractions, causing the heart rate to increase. Alcohol depresses the autonomic nervous system, which can lead to heart failure, cardiac dysrhythmias (most commonly atrial fibrillation), and cardiac arrest. Chronic drinking can severely damage the heart and blood vessels, resulting in hypertension and cardiomyopathy.

Question No: 11

After cardiac surgery, urinary output should be monitored to ensure adequate renal perfusion.

Urinary output should be more than:

- A. 20 ml/hr.
- B. 25 ml/hr.
- C. 50 ml/h r.
- D. 75 ml /hr.

Answer: B

Explanation: Urinary output after surgery varies, according to fluid intake, but should be more than 25 ml/hr. Urinary output less than 25 ml/hr indicates decreased renal function. Urine specific gravity should be maintained at 1.015-1.025, indicating the ability of the kidneys to concentrate urine in the renal tubules. Blood urea nitrogen, creatinine, urine, and serum electrolytes are monitored to ensure that the kidneys can excrete waste products. Urinary output is usually monitored every hour while the patient is in the critical care unit.

Question No: 12

Which of the following cardiac symptoms are typical of cocaine use?

- A. Hypertension and increased heart rate.

- B. Hypertension and decreased heart rate.
- C. Hypotension and increased heart rate.
- D. Hypotension and decreased heart rate.

Answer: A

Explanation: Most cocaine users typically demonstrate hypertension and an increased heart rate. Chest pain may mimic a myocardial infarction. Vasoconstriction occurs both within the coronary arteries and the peripheral circulation, resulting in hypertension and episodes of cardiac ischemia that may cause infarcts. In some cases, multiple infarcts may occur even with normal coronary arteries.

Cardiomyopathy with enlargement of the left ventricular muscle is common in chronic users.

Question No: 13

Venous ulcers commonly have which of the following characteristics?

- A. They are deep and circular.
- B. They are superficial and irregularly shaped.
- C. They are often necrotic.
- D. They appear primarily on the toes and toe webs.

Answer: B

Explanation: Venous ulcers are typically superficial, irregular ulcers on the medial or lateral malleolus and sometimes the anterior tibial area, causing varying degrees of pain. Surrounding skin often has a brownish discoloration. Edema is moderate to severe. Arterial ulcers are painful, deep, circular, often necrotic ulcers found on toe tips, toe webs, heels, or other pressure areas. There is often rubor on dependency but pallor on foot elevation, and skin is pale, shiny, and cool. Edema is minimal.

Question No: 14

What preparation is necessary for a patient scheduled for a radionuclide ventriculogram?

- A. No special preparation is needed.
- B. Patients must fast for 4-6 hours.
- C. Cardiac medications are withheld for 4 hours.
- D. Patients should be on bed rest for 8 hours before the exam.

Answer: A

Explanation: No special preparation is needed for a radionuclide ventriculogram. A sample of blood is withdrawn, labeled with a technetium 99m radionuclide, and then injected back into the patient. With electrocardiogram (ECG) guidance, images are obtained during the cardiac cycle. The video display provides images similar to that of a contrast angiogram. The radionuclide ventriculogram is used to evaluate diastolic and systolic function for patients with heart failure from valvular heart disease or to monitor the toxic effects of chemotherapeutic drugs.

Question No: 15

Physical changes that suggest a severe cardiovascular disorder, such as pulmonary edema and congestive heart failure, include:

- A. peripheral cyanosis of the nails and skin of the nose, lips, and extremities.
- B. pallor.
- C. central cyanosis of the tongue and buccal mucosa.
- D. xanthelasma.

Answer: C

Explanation: Central cyanosis of the tongue and buccal mucosa indicates severe cardiovascular disease, such as pulmonary edema or congestive heart failure. Pallor is the result of decreased levels of oxyhemoglobin, usually resulting from anemia or decreased perfusion. Peripheral cyanosis of the nails, nose, and extremities indicates decreased circulation and can occur with heart failure or other causes of vasoconstriction (e.g., cold). Xanthelasma is a yellowish plaque, usually on the eyelids, indicating high levels of cholesterol.

Question No: 16

Angiotensin-converting enzyme inhibitors are contraindicated in patients with:

- A. hypertension.
- B. diabetes mellitus.
- C. heart failure.
- D. renal failure.

Answer: D

Explanation: Angiotensin-converting enzyme (ACE) inhibitors are contraindicated in patients with renal failure, as one of the most serious side effects of these drugs is renal impairment, especially in patients also taking diuretics and non-steroidal anti-inflammatory drugs. The ACE inhibitors are commonly used to treat hypertension and heart failure. They are often combined with diuretics, such as the thiazide diuretics (hydrochlorothiazide) for hypertension or furosemide (Lasix) for heart failure. The ACE inhibitors are sometimes given to patients with diabetes mellitus to prevent diabetic neuropathy.

Question No: 17

A patient on mechanical ventilation who is retaining carbon dioxide is at risk for:

- A. metabolic acidosis.
- B. respiratory acidosis.
- C. metabolic alkalosis.
- D. respiratory alkalosis.

Answer: B

Explanation: Mechanical ventilation can cause hypoventilation and carbon dioxide retention, resulting in respiratory acidosis. Renal compensatory actions include retention of bicarbonate (HCO_3) and increased excretion of hydrogen (H). Serum pH and PCO_2 are decreased. Symptoms include flushed skin, ventricular fibrillation, and hypotension. Patients may develop drowsiness, headaches, disorientation, seizures, and coma.

Question No: 18

Sexual activity after recovery from a myocardial infarction (MI) can be considered:

- A. low risk as sexual activity provides physical and psychological benefits.
- B. high risk as sexual activity could precipitate another MI.
- C. very high risk, especially in patients who also use nitroglycerine for angina.
- D. no risk as sexual activity has no effect on cardiovascular disease.

Answer: A

Explanation: The risks associated with sexual activity after recovery from a myocardial infarction are very low, and most heart recovery programs encourage exercise. However, before a sexual encounter, it is important to consider the following:

- The person should be well rested.

- The person should wait 1-3 hours after eating.
- A comfortable position should be used to minimize stress.
- Foreplay is important so that the heart rate increases and strengthens in preparation for intercourse.
- If the person takes nitroglycerine for angina, this medication should be taken before sexual activity.

Question No: 19

When wearing a Holter monitor, a patient should:

- A. refrain from taking cardiac medications.
- B. restrict activities.
- C. maintain an activity diary.
- D. turn it off during the night.

Answer: C

Explanation: While wearing a Holter monitor, patients should maintain an activity diary so that any abnormality can be linked to this activity. Conversely, the diary may demonstrate that no abnormality occurs with certain activities. Patients should continue with prescribed medications and carry out normal activities since the primary purpose of a Holter monitor is to assist in diagnosis and to determine triggers for abnormal electrocardiogram readings. The monitor should be used during the night as some cardiac abnormalities may occur during sleep.

Question No: 20

The best approach to be used with a 35-year-old woman who has Marfan syndrome as well as severe mitral valve prolapse and heart failure is to:

- A. delay surgery as long as possible.
- B. repair the valve rather than replace it.
- C. replace the valve rather than repair it.
- D. avoid surgery because of life-threatening complications.

Answer: B

Explanation: The best approach for severe mitral valve prolapse with heart failure is to repair the valve rather than to replace it because of the connective tissue abnormalities associated with Marfan syndrome. These abnormalities may result in dehiscence when prosthetic valves are used. Severe mitral valve prolapse can result in complications, such as heart failure, endocarditis, and cardiac arrest, so delaying surgery increases the risk; therefore, delaying or avoiding surgery are options only for mild cases of mitral valve prolapse.

Question No: 21

When a person believes that a health action will prevent a negative outcome and then takes that action, what behavioral change model can be applied to this behavior?

- A. Theory of reasoned action.
- B. Theory of planned behavior.
- C. Stress appraisal and coping theory.
- D. Health belief model.

Answer: D

Explanation: The health belief model is used to predict health behavior when a person takes a health action to avoid negative consequences if the person believes the action will prevent a negative outcome. The theory is based on six basic perceptions:

- Susceptibility, the belief that a person may get a negative condition
- Severity, an understanding of how serious a condition is
- Benefit, a belief that action will reduce risk
- Barriers, such as direct or psychological costs
- Action cues or strategies, such as education, to encourage action
- Self-efficacy, the confidence in the ability to take action and to achieve positive results

Question No: 22

When assessing nicotine dependence, which action listed below indicates a serious dependence?

- A. Smoking even if bedridden with illness.
- B. Smoking the first cigarette within 5 minutes of awakening.
- C. Smoking 11-20 cigarettes daily.
- D. Smoking in places where it is prohibited.

Answer: B

Explanation: Smoking the first cigarette within 5 minutes of awakening is one of the primary signs of a high level of nicotine dependence as is smoking 31 or more cigarettes daily. Patients who are dependent on cigarettes also often smoke in areas where it is prohibited (e.g., at work) and smoke even if they are extremely ill. Patients may benefit from keeping a smoking diary to help to identify their smoking patterns.

Question No: 23

Which teaching method listed below is probably the most effective and efficient for teaching a group of patients about lifestyle modifications related to hypertension?

- A. Computer-assisted instruction.
- B. Group lecture only.
- C. Group lecture and discussion.
- D. One-on-one instruction.

Answer: C

Explanation: The most effective and efficient method of teaching a group about lifestyle changes is the group lecture and discussion. These allow the nurse to provide information and for people with shared concerns to interact and discuss issues. Computer-assisted instruction is not effective for all patients, especially older adults, and lectures only may not address specific concerns of the patients. One-on-one instruction is good for teaching specific processes or information, but it does not allow patients to share their concerns with others.

Question No: 24

The "dietary approaches to stop hypertension" (DASH), sponsored by the National Institutes of Health and the National Heart, Lung, and Blood Institute, include a 2100-calorie diet. What percentage of this diet is total fat?

- A. 27%.
- B. 55%.
- C. 18%.
- D. 6%.

Answer: A

Explanation: The goals of the 2100-calorie DASH diet include:

- Total fat: 27%.
- Saturated fat: 6%.
- Protein: 18%
- Carbohydrates: 55%.

Cholesterol is limited to 150 mg/day and sodium to 1500-2300 mg/day. People are encouraged to eat six to eight servings of whole grains, four to five servings of fruit and vegetables, 30 g of fiber, and 6 oz of lean meat daily as well as four to five servings of nuts, seeds, or legumes each week. Sweets and added sugars are limited to five or fewer servings each week.

Question No: 25

Absolute hypovolemic shock is characterized by:

- A. vasodilation.
- B. external loss of fluid only.
- C. internal shifting of fluid or external loss of fluid.
- D. decreased colloidal osmotic pressure.

Answer: C

Explanation: Hypovolemic shock occurs when there is inadequate intravascular fluid. The loss is absolute if caused by internal shifting of fluid or external loss of fluid, such as with massive hemorrhage, thermal injuries, severe vomiting and diarrhea, or a ruptured spleen. The loss is relative if related to vasodilation, increased capillary membrane permeability from sepsis or injuries, and decreased colloidal membrane permeability from loss of sodium or from diseases, such as hypopituitarism or cirrhosis.

Question No: 26

Which educational tool listed below is appropriate for a patient who speaks English but is illiterate?

- A. A children's book.
- B. Handouts prepared at a third-grade level.
- C. Computerized instruction.
- D. Video.

Answer: D

Explanation: Videos are appropriate educational tools for illiterate patients. Material should be at an adult level, so a children's book is not appropriate, and material at a third-grade level may be too difficult for someone who cannot read. Computerized instruction almost always involves some reading for instructions, so this also may not be appropriate. Allowing patients and their families to watch a video demonstration can help them to grasp the fundamentals before they must apply them. Videos are much more effective than written materials for those with low literacy or poor English skills.

Question No: 27

A patient spends half the year in one state and half in another state but wants to complete an advance directive. The best approach is to:

- A. complete separate advance directives to comply with each state's regulations.
- B. complete one advance directive as all states have the same regulations.
- C. inform family members of specific wishes only so an advance directive is not necessary.
- D. store the original advance directive in a safety deposit box.

Answer: A

Explanation: Each state has separate regulations regarding advance directives, so the patient should check state regulations and fill out two advance directives if necessary. Most require two witnesses, but some do not. Some states invalidate an advance directive if the person is pregnant. Telling family members is not adequate as these people may not be available or may be unwilling to carry out the patient's wishes. Advance directives should not be placed in a safety deposit box where access is limited.

Question No: 28

Which blood pressure (BP) listed below poses the greatest risk of cardiovascular disease for people over 50 years of age?

- A. Diastolic pressure >80 mm Hg.
- B. Increased BP after exercise.
- C. Systolic pressure >140 mm Hg.
- D. Pulse pressure of 40 mm Hg.

Answer: C

Explanation: The greatest risk of cardiovascular disease for people over 50 years of age is from a systolic blood pressure (BP) of 140 mm Hg or more rather than an increased diastolic pressure. However, increased diastolic pressure (>80 mm Hg) is a greater risk factor for people younger than 50 years of age. Pulse pressure of 40 mm Hg is normal for people at rest. Patients should avoid caffeine, exercise, and smoking for 30 minutes before a BP examination.

Question No: 29

A patient who has been treated with unfractionated heparin over five days develops a sudden drop in platelets from 120,000 mm³ to 45,000 mm³, suggesting heparin-induced thrombocytopenia, which places this patient at risk for:

- A. hemorrhage.
- B. thrombosis and vessel occlusion.
- C. shock.
- D. infection.

Answer: B

Explanation: Heparin-induced thrombocytopenia can cause a thrombosis syndrome that increases the patient's risk for thrombosis and vessel occlusion rather than hemorrhage. A platelet count below 50,000 mm³ indicates a type II reaction (rather than transient type I reaction), an autoimmune reaction to heparin; the reaction causes heparin-antibody complexes to form and also causes a release of platelet factor 4, which in turn attracts heparin molecules that adhere to platelets and endothelial lining, stimulating thrombin and platelet clumping. Discontinuation of the heparin and treatment with direct thrombin inhibitors (lepirudin [Refludan], argatroban [Argatroban]) are indicated.

Question No: 30

A nursing team leader delegates a task to an unlicensed assistant. Who is responsible for the patient outcome of this task?

- A. The unlicensed assistant who completes the task.
- B. Both the team leader and the unlicensed person who complete the task.
- C. The team leader who delegates the task.
- D. The administrative staff.

Answer: C

Explanation: A nurse who delegates a task to an unlicensed assistant is accountable for patient outcomes and for supervision of the person to whom the task was delegated. The scope of nursing includes delegation of tasks to unlicensed assistive personnel, providing those personnel have adequate training and knowledge. Delegation can be used to manage the workload and to provide adequate and safe care. Delegation should be done in a manner that reduces liability by providing adequate communication.

Question No: 31

Endothelial dysfunction is associated with:

- A. cardiac dysrhythmias.
- B. cardiac arrest.
- C. hypertension.
- D. vasodilation.

Answer: C

Explanation: Endothelial dysfunction is a key factor in the development of atherosclerosis and hypertension. The ability of arteries and arterioles to dilate is impaired. As the impairment of the endothelium becomes greater, the blood pressure rises. The endothelium mediates hemostasis, coagulation, fibrinolysis, cell proliferation, and cell wall inflammatory mechanisms. Endothelial dysfunction is associated with hyperlipidemia, smoking, diabetes, and lack of exercise. Research has not yet indicated if endothelial dysfunction is the direct cause of hypertension or the result.

Question No: 32

The goal of an exercise stress test is to raise the heart rate to what percentage predicted for age and gender?

- A. 200%.
- B. 50%.
- C. 80-90%.
- D. >100%.

Answer: C

Explanation: The goal of the exercise stress test is to raise the heart rate to 80-90% of that predicted for age and gender. Cardiac stress testing is done to determine if the coronary arteries dilate adequately during exercise. Normal coronary arteries dilate four times the resting diameter when under stress, so testing is more accurate when exercising than when resting to determine if there is compromised blood flow.

The Bruce protocol, in which the speed and grade of the treadmill increases every three minutes, is most common. Chemical stress tests, using adenosine or dipyridamole (Persantine), may be used for those who cannot exercise.

Question No: 33

Janeway lesions, splinter hemorrhages, and Roth's spots are immunological responses associated with:

- A. endocarditis.
- B. pericarditis.
- C. myocarditis.
- D. aortic valve dysfunction.

Answer: A

Explanation: Janeway lesions, splinter hemorrhages, Roth's spots, petechiae on oral mucosa, and

glomerulonephritis are immunological responses associated with endocarditis, which is an infection of the endothelial surface and valves of the heart caused by invasion of the tissue by a pathogen, usually after surgery, intravenous (IV) catheterization, or IV drug abuse. Other manifestations include low grade fever, anorexia, weight loss, malaise, splenomegaly, and anemia. Patients with pericarditis present with chest pain, mild fever, increased erythrocyte sedimentation rate, white blood cell count, and friction rub. It may cause aortic valve dysfunction or mitral valve insufficiency. Patients with myocarditis may present asymptotically or with fatigue, dyspnea, and palpitations, but also with sudden cardiac arrest.

Question No: 34

The best determinant of the effectiveness of patient education is the:

- A. patient's satisfaction.
- B. patient's ability to demonstrate procedure.
- C. patient's ability to explain procedure and demonstrate understanding.
- D. patient's behavior modification and compliance rates.

Answer: D

Explanation: Behavior modification and compliance rates are the best determinants of the effectiveness of patient education. Patients may be satisfied, may understand, and may be able to provide a demonstration, but if they do not use what they have learned, the education has not been effective. Behavior modification involves thorough observation and measurement, identifying behavior that needs to be changed, and then planning and instituting interventions. Compliance rates should be determined by observation on multiple occasions.

Question No: 35

Which of the following treatments is considered appropriate palliative care?

- A. Chemotherapy for cancer.
- B. Intubation with mechanical ventilation for respiratory failure.
- C. Radiotherapy to relieve pain associated with bone cancer.
- D. Total parenteral nutrition for patients who cannot eat.

Answer: C

Explanation: Palliative care provides comfort rather than curative treatment although sometimes treatment that may be considered curative—such as radiotherapy—may be used to relieve pain or symptoms. Palliative care is meant to improve the quality of life and relieve suffering but to neither prolong life nor hasten death. Palliative care provides adequate pain management and relief of symptoms (such as nausea and shortness of breath). Chemotherapy, intubation, ventilation, and total parenteral nutrition are not generally considered palliative care.

Question No: 36

Electrocardiograph changes characteristic of hypokalemia include:

- A. tall peaked T waves with widening and increased amplitude of QRS and prolongation of the QT interval.
- B. a U wave more than 1 mm high after the T wave, AV block, and flat or inverted T waves.
- C. dysrhythmias with prolonged PR and QT intervals and broad flat T waves.
- D. non-specific changes.

Answer: B

Explanation: Changes on an electrocardiogram (ECG), such as a U wave more than 1 mm high after the T

wave, AV block, and flat or inverted T waves, are characteristic of hypokalemia. Tall peaked T waves with widening and increased amplitude of QRS and prolongation of the QT interval are characteristic of hyperkalemia. Dysrhythmias with prolonged PR and QT intervals and broad flat T waves are characteristic of hypomagnesemia. Other electrolyte imbalances are not reflected by specific ECG changes although hypermagnesemia can lead to cardiac arrest, and hypercalcemia can cause dysrhythmias (similar to those of digitalis toxicity).

Question No: 37

Metabolic syndrome is characterized by:

- A. abdominal obesity, decreased triglyceride level, increased high-density lipoprotein (HDL) level, and hypertension.
- B. hypertension, abdominal obesity, and increased HDL level.
- C. abdominal obesity, increased triglycerides, decreased HDL level, elevation of blood pressure, and increased fasting blood glucose.
- D. hypotension, decreased fasting blood glucose, increased triglycerides, and decreased HDL level.

Answer: C

Explanation: Metabolic syndrome (insulin resistance) puts people at risk for the development of diabetes mellitus and cardiovascular disease; it is characterized by abdominal obesity (>35 inches in women and >40 inches in men), increased triglycerides (~150), decreased HDL level (<40 in men and <50 in women), elevation of blood pressure (~130/85 mm Hg), and increased fasting glucose (~110). Other indicators include elevation of C-reactive protein, evidence of a proinflammatory state, high levels of fibrinogen, and evidence of a prothrombotic state.

Question No: 38

According to the Nursing Code of Ethics of the American Nurses Association, nurses must support a patient's autonomy and self-determination. If a 24-year-old Asian woman states a treatment preference but plans to leave the decision to family members, the nurse should:

- A. try to convince the patient to assert herself.
- B. respect the patient's right to be guided by family.
- C. tell the family that the patient should be the one to make the decision.
- D. ask the ethics committee to intervene so that the patient is properly treated.

Answer: B

Explanation: Under the Nursing Code of Ethics of the American Nurses Association, autonomy and self-determination are viewed within the broader context of diverse cultures. The idea of individualism is less important in some cultures, so the nurse must respect and appreciate the patient's right to be guided by her family.

Trying to convince the patient to assert herself may just lead to emotional conflict. This is not an appropriate concern for the ethics committee, as the woman is not being forced to comply with family decisions but chooses to do so.

Question No: 39

A patient has an atrioventricular (AV) block in which there are more P waves than QRS complexes, with no clear relationship between them, and an atrial rate two to three times the pulse rate. There is also an irregular PR interval. What type of AV block is this patient likely to have?

- A. First-degree AV block.
- B. Second-degree AV block, Mobitz type I.
- C. Second-degree AV block, Mobitz type II.
- D. Third-degree AV block.

Answer: D

Explanation: In third-degree atrioventricular (AV) block, there are more P waves than QRS complexes, with no clear relationship between them, and an atrial rate two to three times the pulse rate, with an irregular PR interval. If the sinoatrial node malfunctions, the AV node fires at a lower rate, and if the AV node malfunctions, the pacemaker site in the ventricles takes over at a bradycardic rate: thus, with complete AV block, the heart still contracts but often ineffectually. The atrial P (sinus rhythm or atrial fibrillation) and the ventricular QRS (ventricular escape rhythm) are stimulated by different impulses, so there is AV dissociation. The heart cannot compensate with exertion.

Question No: 40

Cor pulmonale is characterized by changes in the:

- A. left atria.
- B. left ventricle.
- C. right atria.
- D. right ventricle.

Answer: D

Explanation: Cor pulmonale (also known as pulmonary heart disease) is characterized by changes in the right ventricle because of a pulmonary disorder, such as chronic obstructive pulmonary disease. Cor pulmonale begins with endothelial dysfunction, resulting in vasoconstriction and vessel wall thickening, with sustained pulmonary hypertension, resulting in right ventricular hypertrophy in chronic cor pulmonale and right ventricular dilation in acute cor pulmonale. The end result is right-sided heart failure.

Question No: 41

The primary reason for completing professional development courses is to:

- A. comply with state requirements for licensure.
- B. remain current in the field of nursing.
- C. meet institutional requirements for employment.
- D. fulfill requirements for a salary increase.

Answer: B

Explanation: The primary reason for completing continuing education courses is to remain current in the field of nursing. It is every nurse's responsibility to be informed and aware of changes in practice. Many states require continuing education for licensure, and some institutions require continuing education for employment. Taking courses to meet requirements for salary increase is a personal reason that does not obviate professional responsibility for learning.

Question No: 42

Cognitive changes associated with aging affect learning in which of the following ways?

- A. Patients are better able to focus attention because their lives have fewer distractions (kids, jobs).
- B. Explicit memories (facts) decline, but implicit memories (skills) often stay the same.
- C. Older adults have the same ability to learn as young adults.

D. Patients have less difficulty with complex tasks.

Answer: B

Explanation: Cognitive changes associated with aging may result in the decline of explicit memories (facts) while implicit memories (skills) remain intact. Older adults may have difficulty in completing complex tasks that require processing of new information and may become easily distracted and less able to focus attention. Working memory declines, making it more difficult for older adults to complete mental processes that require keeping facts in memory (e.g., calculating costs); they may also have difficulty retrieving words, such as the names of people or objects.

Question No: 43

What adverse effects are related to immunosuppression with high doses of tacrolimus after a heart transplant?

A. Facial dysmorphism.

B. Hypertension.

C. Hirsutism and acne.

D. Nephrotoxicity.

Answer: D

Explanation: High doses of tacrolimus (an immunosuppressive macrolide antibiotic) can result in nephrotoxicity (similar to cyclosporine) with elevated blood urea nitrogen and creatinine. Other effects include hyperkalemia, insomnia, and malaise. Tacrolimus is often used instead of cyclosporine because it is generally well tolerated and is also effective for rescue therapy during cardiac rejection. Hypertension is an adverse effect of cyclosporine and corticosteroids. Facial dysmorphism is related to cyclosporine use. Hirsutism and acne are common adverse effects of corticosteroids.

Question No: 44

The automatic implantable cardioverter defibrillator (AICD) delivers which of the following impulses?

A. Continuous (asynchronous) electrical impulses to control pulse rate.

B. Dual-chamber sequential electrical impulses.

C. On-demand (synchronous) electrical impulses when the pulse increases to a preset rate.

D. On-demand electrical impulses when the pulse rate decreases to a preset rate.

Answer: C

Explanation: The automatic implantable cardioverter defibrillator (AICD), used to control tachycardia and fibrillation, provides on-demand (synchronous) small electrical impulses to the atrial or ventricular myocardium to slow the heart when the pulse rate increases to a preset rate. If fibrillation occurs, a high-energy shock is delivered. It takes 5-15 seconds for the device to detect abnormalities in the pulse rate, and more than one shock may be required, so fainting may occur. Some devices can function as both a pacemaker and an ICD for patients with episodes of both bradycardia and tachycardia.

Question No: 45

An episode of syncope associated with exertional exercise is a manifestation of:

A. aortic regurgitation.

B. aortic stenosis.

C. mitral valve prolapse.

D. endocarditis.

Answer: B

Explanation: Syncope associated with exertional exercise is a manifestation of aortic stenosis. With aortic stenosis, exercise results in reduced cerebral blood flow because of peripheral dilation without increased cardiac output. In some cases, the hypotension related to syncope may result in ventricular fibrillation or ventricular tachycardia and death. Syncope, a sudden brief loss of consciousness, may also be caused by carotid sinus sensitivity (vasovagal syndrome) or dysrhythmias (tachycardia, bradycardia). In older adults, syncope often occurs with postural hypotension, sometimes related to medications or alcohol.

Question No: 46

A patient with a dissecting descending thoracic aortic aneurysm will most likely complain of:

- A. severe, dull pain that builds in intensity in the anterior chest and nausea and vomiting.
- B. severe, tearing, knife-like pain that builds in intensity in the anterior chest and nausea and vomiting.
- C. dull, aching pain posteriorly below the scapula and nausea and vomiting.
- D. severe, intense, tearing, knife-like pain posteriorly between the scapulae and nausea and vomiting.

Answer: D

Explanation: Symptoms typical of a dissecting descending aortic aneurysm include severe, intense, knife-like pain posteriorly between the scapulae and nausea and vomiting. In addition, patients may be cold and clammy. Dissection of the ascending thoracic aorta results in similar symptoms, but the pain is in the anterior chest. Pain with dissection does not generally increase in intensity, as it is severe at onset when the tearing occurs. Peripheral arteries may be involved, which can cause numbness, tingling, and evidence of vascular insufficiency in the affected limb.

Question No: 47

A patient who is receiving digoxin (Lanoxin) and furosemide (Lasix) daily is also prescribed tetracycline for rosacea and subsequently develops nausea, vomiting, and tachycardia. The most likely cause is:

- A. digitalis toxicity.
- B. allergic response to tetracycline.
- C. drug interaction.
- D. superinfection.

Answer: A

Explanation: The most likely cause of nausea, vomiting, and tachycardia is digitalis toxicity. Most cases of digitalis toxicity can be traced to drug interactions. In this case, both furosemide (Lasix) and tetracycline can cause digitalis toxicity when taken with digoxin (Lanoxin). Digoxin levels should be monitored to ensure that therapeutic levels (0.5-2.0 ng/ml) are maintained. Early signs of digitalis toxicity include fatigue, lethargy, depression, nausea, and vomiting. Sudden changes in heart rhythm, atrioventricular or sinoatrial block, new ventricular dysrhythmias, or tachycardia may occur. Digoxin immune FAB (Digibind) may be given to inactivate digoxin, if necessary.

Question No: 48

A patient is receiving warfarin (Coumadin) along with other treatment for non-valvular atrial fibrillation. The international normalized ratio range should be:

- A. 1.5-2.
- B. 2-3.
- C. 3-4.
- D. >4.

Answer: B

Explanation: While the international normalized ratio (INR) is individualized, depending on baseline readings, a normal INR is usually about 1. Patients receiving warfarin (Coumadin) for atrial fibrillation are usually maintained at an INR of 2-3. The INR for prophylaxis for deep vein thrombosis is 1.5-2 and for pulmonary emboli and mechanical heart valves is 3-4. The higher the number, the greater the anticoagulation effect, so a level over 4 may put the patient at risk for hemorrhage.

Question No: 49

A patient with the recent implantation of a pacemaker develops severe hiccups, which indicates:

- A. irritation of the ventricular wall.
- B. phrenic nerve or muscle stimulation from dislocation of leads.
- C. impending cardiac tamponade.
- D. allergic response to medications.

Answer: B

Explanation: Hiccups are an indication that a pacemaker lead has become dislodged and is causing phrenic nerve or muscle stimulation. Other complications include infection; bleeding; hematoma; puncture of the subclavian vein or internal mammary artery, causing hemothorax; irritation of the ventricular wall by the endocardial electrode, causing ectopic beats or tachycardia; malfunction or perforation of the myocardium from dislodgement of a transvenous lead; and cardiac tamponade, resulting from removal of epicardial wires used for temporary pacing.

Question No: 50

A patient is being considered for thrombolytic therapy with alteplase tissue-type plasminogen activator (t-PA). Contraindications to thrombolytic therapy include which of the following?

- A. The patient has a 3.5 cm aortic aneurysm.
- B. It has been two hours since the onset of symptoms.
- C. The patient's blood pressure has been 180/90 mm Hg but is now controlled by medication.
- D. The patient had an ischemic stroke six months previously.

Answer: A

Explanation: Contraindications to thrombolytic therapy include an aortic aneurysm, hemorrhagic stroke, recent surgery, or bleeding. While ideally thrombolytic therapy should be administered within 90 minutes of the onset of symptoms, some thrombolytics (tenecteplase) may be given within 6 hours and some within 12 hours. A history of any type of stroke within two months precludes thrombolytic therapy.

Severe hypertension (>210/130 mm Hg) that is uncontrolled by medications or that occurs with retinalvascular disease is also a contraindication. Relative contraindications include age over 75 years, pregnancy, pericarditis, and endocarditis.

Question No: 51

Which of the following medications should be discontinued for a minimum of 48 hours before cardioversion?

- A. Digoxin.
- B. Warfarin.
- C. Cardizem.
- D. Insulin.

Answer: A

Explanation: Digoxin should be withheld for a minimum of 48 hours before cardioversion. Anticoagulation, usually with warfarin (Coumadin), is prescribed at least three weeks before cardioversion to prevent emboli. Sometimes drug therapy is used in conjunction with cardioversion: for example, antiarrhythmics (Cardizem, Cordarone) may be given before the procedure to slow the heart rate. Insulin should not be withheld for 48 hours, but the patient must fast before cardioversion and may be asked to delay the insulin injection on the morning of the procedure.

Question No: 52

A patient with heart failure has no symptoms at rest, but symptoms appear with physical exertion and cause some limitations of activities of daily living and slight pulmonary edema. This heart failure is classified as:

- A. class I.
- B. class II.
- C. class III.
- D. class IV

Answer: B

Explanation: Symptoms that do not occur with rest but with physical exertion, limitations with the activities of daily living (ADLs), and slight pulmonary edema are typical of class II heart failure:

- Class I: Asymptomatic during normal activities and no pulmonary congestion or peripheral hypotension. Prognosis is good.
- Class II: No symptoms at rest but symptoms appear with physical exertion, limiting ADLs. Slight pulmonary edema may be evident. Prognosis is good.
- Class III: Obvious limitations of ADLs and discomfort on any exertion. Prognosis is fair.
- Class IV: Symptoms are present. Prognosis is poor.

Question No: 53

The treatment of choice for significant pulmonary stenosis is:

- A. closed valvotomy.
- B. open valvotomy.
- C. balloon valvuloplasty.
- D. valve replacement with homograft valve.

Answer: C

Explanation: Balloon valvuloplasty is the treatment of choice for significant pulmonary stenosis, resulting in a narrowing of the valve or the area above or below the valve. Closed valvotomy (without cardiopulmonary bypass) is no longer done, but open valvotomy with cardiopulmonary bypass may be needed if the balloon valvuloplasty is unsuccessful and symptoms recur. Valve replacement with a homograft valve is sometimes required, usually as an intervention after previous failure to correct the disorder.

Question No: 54

Which of the following medications may be used after cardiac surgery to treat low cardiac output?

- A. Nitroprusside.
- B. Dobutamine.
- C. Dopamine.
- D. Isoproterenol.

Answer: B

Explanation: Dobutamine is used to treat low cardiac output after cardiac surgery. Nitroprusside decreases blood pressure and afterload. Dopamine is used to treat shock and hypotension for patients who require volume resuscitation. Isoproterenol is used to stimulate the heart in patients with severe bradycardia.

Other drugs include nitroglycerine, which is used to prevent spasm in arterial grafts and to reduce preload and afterload, and epinephrine, which is used to treat low cardiac output related to shock.

Milrinone is also used to treat low cardiac output. Phenylephrine, norepinephrine, and vasopressin increase systemic vascular resistance and blood pressure and are used to treat shock.

Question No: 55

When preparing written materials for patients, what reading level would be appropriate for a homogeneous group of adults in an affluent area?

- A. Grade 3 level.
- B. Grade 6 level.
- C. Grade 9 level.
- D. Grade 12 level.

Answer: B

Explanation: The best reading level for a group of adults from an affluent area is grade six. The average American reads effectively at the sixth- to eighth-grade level, regardless of education achieved, and research shows that even people with high reading skills learn health information most effectively when the material is presented at the sixth- to eighth-grade reading level. Grade-three reading level is too simple for native English speakers but might be appropriate for an immigrant population with limited English.

Question No: 56

Monitoring a patient for acute rejection after cardiac transplantation is primarily done by:

- A. reviewing clinical symptoms.
- B. blood testing.
- C. biopsy.
- D. electrocardiogram.

Answer: C

Explanation: While clinical symptoms, blood tests, and electrocardiogram monitoring are all important, biopsy remains the primary tool to diagnose acute rejection after cardiac transplantation. Acute rejection can occur with few clinical symptoms even when using cyclosporine or tacrolimus to prevent rejection, so routine biopsies are done for the first three months after surgery. The first biopsy is generally done in two weeks and then once weekly for the first month; biopsies are then tapered to every other week, then once monthly after the initial 3-month period, and then every 4-12 months, depending on the institutional protocol.

Question No: 57

When examining the chest, where is the apex beat (pulsation) usually observed?

- A. It cannot be observed, only palpated.
- B. Around the third intercostal space on the left mid-clavicular line.
- C. Around the fourth intercostal space on the left mid-clavicular line.
- D. Around the fifth intercostal space on the left mid-clavicular line.

Answer: D

Explanation: The apex beat (pulsation) can be observed in about half of patients at about the fifth intercostal