Examination

1. Regarding urinary tract interventions, one anatomic fact regarding the blood supply of the kidney is important to know. As the main renal artery enters the kidney, it divides into
   a. three branches.
   b. ventral and dorsal branches.
   c. lateral and medial branches.
   d. right and left branches.
   e. numerous tiny capillaries.

2. The main indications for urinary tract intervention are
   a. bleeding.
   b. various congenital anomalies.
   c. renal cysts and bifurcated ureter.
   d. renal tumors (benign and malignant).
   e. hydronephrosis and or renal stones.

3. Hydronephrosis by definition is the dilatation of the collecting system and ureter. All of the following are the more common causes for the development of this disorder EXCEPT
   a. a stone blocking the ureter.
   b. a stricture of the ureter (which is either benign or malignant).
   c. a tumor in the retroperitoneum encasing the ureter.
   d. a bladder tumor blocking the ureter.
   e. an intestinal tumor producing a mass effect on the ureter.

4. Regarding renal calculi (stones), the largest is known as a staghorn calculus. Other stones that often require intervention are large calculi within the collecting system that are refractory to
   a. shock lithotripsy.
   b. pain medications.
   c. cystoscopy.
   d. nephroscopy.
   e. antegrade pyelography.

5. Which of the following statements is true regarding antegrade pyelography?
   a. For antegrade pyelography, the patient is almost always under general anesthesia.
   b. For antegrade pyelography, infection is of little risk and therefore aseptic conditions are not generally performed.
   c. For antegrade pyelography, the skin is infiltrated with local anesthetic and a 22g needle is advanced into the renal pelvis under fluoroscopic guidance.
   d. For antegrade pyelography, the radiologist usually enters the renal pelvis from below through the bladder.
   e. Suction is applied to the needle as it is advanced and when blood is aspirated, contrast is then injected.

6. The basic technique for accessing the collecting system is as follows. Ideally, an access site is chosen in a lower pole calyx because
   a. this is above the costal margin.
   b. this is where most obstructions occur.
   c. lower pole calyces are larger and easier to enter.
   d. this will usually cause the least amount of pain.
7. The construction of the nephrostomy catheter is such that it has several holes at its distal end. There is a thread, which passes through the lumen of the catheter that exits one of the distal holes and is then fixed to the tip of the catheter. By pulling on the thread, the tip of the catheter is then approximated to the hole through which the thread exits and thereby forms
   a. a Whitaker loop
   b. a Kandarpa loop
   c. a Cope loop
   d. an Aruny loop
   e. a French loop

8. Generally in patients with a malignant stricture of the distal ureter or from a stricture of benign causes it is desirable to establish ________ drainage.
   a. internal
   b. external
   c. peritoneal
   d. shunt
   e. intestinal

9. A double J stent catheter is not permanent and has to be changed every
   a. month
   b. six months
   c. three months
   d. six weeks
   e. three weeks

10. In most instances, double J stents are placed by urologists use a cystoscopic approach and this is performed
    a. by ultrasound
    b. from below through the bladder
    c. by fluoroscopy
    d. by utilizing antegrade pyelography
    e. under CT guidance

11. In order to perform nephrostolithotomy, the interventional radiologist inserts
    a. only one guidewire
    b. a total of two guidewires
    c. a total of three guidewires
    d. only a catheter with no guide wires
    e. one guidewire and an introducing sheath

12. In performing nephrostolithotomy, the first wire is referred to as the working wire and it is used to dilate the nephrostomy tract to a size of
    a. 1 cm diameter
    b. 1 inch diameter
    c. 1 mm diameter
    d. 2 mm diameter
    e. 2 cm diameter

13. All of the following statements are true EXCEPT
    a. With nephrostolithotomy, if the stone is larger than the tract, it can be broken up by using a process called lithotripsy.
b. With nephrostolithotomy, the stone is viewed with the use of a cystoscope or nephroscope through the introducing sheath.
c. Following the use of lithotripsy during nephrostolithotomy, the fragments of stone are then removed until most, if not all, of the collecting system is free of stone.
d. With nephrostolithotomy, the stone is generally smaller than the tract and can be easily removed using grasping instruments.
e. An ultrasonic device, a laser device, or an electrohydraulic device may be used in breaking up large stones during nephrostolithotomy.

14. A benign stricture of the ureter that is caused by fibrosis or adhesions from a prior surgical procedure can be treated by using ____ to dilate the stricture.
   a. a Cope loop
   b. a Whitaker stent
   c. progressively larger double J stents
   d. balloon dilation over a guidewire
   e. a Kandarpa loop

15. When treating benign strictures of the ureter with balloon dilation, in order to insure that healing occurs in an expanded position, a double J stent is placed across the stricture site and it is generally left in position for
   a. three months
   b. three weeks
   c. one year
   d. six months
   e. six weeks

16. The Whitaker Test is a test that is generally utilized in
   a. in the elderly
   b. in adults
   c. in children
   d. diabetics
   e. immunocompromised individuals

17. In children, hydronephrosis may be due to ________ and not obstruction. Therefore, urologists often perform pressure studies to determine the difference.
   a. reflux
   b. an infection
   c. cancer
   d. hemorrhage
   e. a tumor

18. In performing pressure studies, a differential pressure between the renal pelvis and the bladder of greater than __________ is diagnostic of an obstruction.
   a. 60 mm of mercury
   b. 50 mm of mercury
   c. 40 mm of mercury
   d. 30 mm of mercury
   e. 20 mm of mercury

19. Unfortunately, complications (though usually uncommon) can occur with interventional radiological techniques. The two most common complications are
   a. infection and loss of a kidney
   b. hemorrhage and infection
   c. hemorrhage and tumor growth
d. loss of a kidney and hemorrhage
e. infection and death

20. A ___________ observation period is necessary after performing a renal drainage procedure to insure that the patient does not become septic.
   a. 24-hour
   b. 12-hour
   c. 2-day
   d. 2-hour
   e. 8-hour