

Chapter 2: Introduction to Urinalysis

Multiple Choice

1. All of the following are components of normal urine except:

- A. Urea
- B. Chloride
- C. Amino acids
- D. Creatinine

ANS: C

DIF: Level 1

OBJ: 1

TOP: Urinalysis composition

2. To determine if a specimen is urine, measure the concentrations of:

- A. Glucose and protein
- B. Urea and creatinine
- C. Uric acid and amino acids
- D. Protein and amino acids

ANS: B

DIF: Level 2

OBJ: 2

TOP: Urinalysis composition

3. The average daily volume of urine produced by a normal adult is approximately:

- A. 200 mL
- B. 500 mL
- C. 1200 mL
- D. 2500 mL

ANS: C

DIF: Level 1

OBJ: 3

TOP: Urine volume

4. A person exhibiting oliguria would have a urine volume of:
- A. 200 to 500 mL
 - B. 600 to 1000 mL
 - C. 1000 to 1500 mL
 - D. more than 1500 mL

ANS: A

DIF: Level 2

OBJ: 3

TOP: Urine volume

5. Which of the following terms is correctly matched with urine output?
- A. Anuria: 400 mL in 24 hours
 - B. Oliguria: 1000 mL in 24 hours
 - C. Polyuria: 3000 mL in 24 hours
 - D. Nocturia: no urine output

ANS: C

DIF: Level 1

OBJ: 3

TOP: Urine volume

6. The polyuria associated with diabetes mellitus is caused by:
- A. The presence of excess glucose in the urine
 - B. A defect in the production of ADH (antidiuretic hormone)
 - C. The diuretic effect of insulin
 - D. Failure of the collecting duct to respond to ADH

ANS: A

DIF: Level 2

OBJ: 3

TOP: Urine volume

7. Urine from a patient with diabetes insipidus has:
- A. Decreased volume and decreased specific gravity
 - B. Decreased volume and increased specific gravity
 - C. Increased volume and increased specific gravity
 - D. Increased volume and decreased specific gravity

ANS: D
DIF: Level 2
OBJ: 3
TOP: Urine volume

8. A patient with polyuria shows a high specific gravity in the urine. The patient should be evaluated for:

- A. Renal tubular acidosis
- B. Diabetes mellitus
- C. Diabetes insipidus
- D. Prostatic infection

ANS: B
DIF: Level 2
OBJ: 3
TOP: Urine volume

9. Persons taking diuretics can be expected to produce:

- A. Anuria
- B. Polyuria
- C. Nocturia
- D. Oliguria

ANS: B
DIF: Level 2
OBJ: 3
TOP: Urine volume

10. A urine specimen may be rejected by the laboratory for all of the following reasons *except*:

- A. Nonmatching label and requisition form
- B. Specimen contaminated with feces
- C. Contamination on the exterior of the container
- D. The container uses a screw-top lid

ANS: D
DIF: Level 1
OBJ: 4
TOP: Specimen collection/handling

11. An unpreserved urine specimen left at room temperature overnight will have decreased:

- A. Bacteria
- B. Specific gravity and pH
- C. Glucose and ketones
- D. Color and specific gravity

ANS: C

DIF: Level 2

OBJ: 6

TOP: Specimen collection/handling

12. Which of the following will be *least* affected in an unpreserved specimen left at room temperature overnight?

- A. Bilirubin
- B. Urobilinogen
- C. Red blood cells
- D. Protein

ANS: D

DIF: Level 2

OBJ: 7

TOP: Specimen collection/handling

13. Red blood cells will disintegrate more rapidly in urine that is:

- A. Concentrated and acidic
- B. Concentrated and alkaline
- C. Dilute and acidic
- D. Dilute and alkaline

ANS: D

DIF: Level 1

OBJ: 7

TOP: Specimen collection/handling

14. The primary cause of the changes that take place in unpreserved urine is:

- A. Bacterial growth
- B. Excessive exposure to light
- C. Oxidation of chemical constituents
- D. Precipitation of crystals

ANS: A

DIF: Level 2

OBJ: 8

TOP: Specimen collection/handling

15. Which of the following urine chemicals will deteriorate when exposed to light?

A. pH

B. Leukocytes esterase

C. Bilirubin

D. Specific gravity

ANS: C

DIF: Level 2

OBJ: 7

TOP: Specimen collection/handling

16. Which of the following is *least* likely to occur if a urine specimen stands at room temperature for more than 2 hours?

A. Deterioration of formed elements

B. Increased bacteria

C. Decreased pH

D. Decreased glucose

ANS: C

DIF: Level 1

OBJ: 7

TOP: Specimen collection/handling

17. A urine specimen for reagent strip glucose analysis can be preserved using all of the following methods *except*:

A. Refrigeration

B. Boric acid

C. Sodium fluoride

D. Commercial tablets

ANS: C

DIF: Level 1

OBJ: 8

TOP: Specimen collection/handling

18. A urine specimen containing a large amount of precipitated amorphous material may have been preserved using:

- A. Refrigeration
- B. Phenol
- C. Formalin
- D. Toluene

ANS: A

DIF: Level 2

OBJ: 7

TOP: Specimen collection/handling

19. In the laboratory, the preferred method of urine preservation is:

- A. Refrigeration
- B. Boric acid
- C. Sodium fluoride
- D. Commercial tablets

ANS: A

DIF: Level 1

OBJ: 9

TOP: Specimen collection/handling

20. A specimen for routine urinalysis and culture can be preserved using:

- A. Sodium fluoride
- B. Boric acid
- C. Formalin
- D. Toluene

ANS: B

DIF: Level 1

OBJ: 9

TOP: Specimen collection/handling

21. All of the following are good preservatives of urinary cellular elements *except*:

- A. Boric acid
- B. Formalin

- C. Sodium fluoride
- D. Thymol

ANS: C

DIF: Level 1

OBJ: 9

TOP: Specimen collection/handling

22. Before analysis, a refrigerated urine specimen must be:

- A. Warmed to 37°C
- B. Examined for crystal formation
- C. Examined for changes in color
- D. Returned to room temperature

ANS: D

DIF: Level 1

OBJ: 9

TOP: Specimen collection/handling

23. The recommended specimen for routine urinalysis testing is the:

- A. Random specimen
- B. Timed specimen
- C. First morning specimen
- D. Catheterized specimen

ANS: C

DIF: Level 1

OBJ: 11

TOP: Types of specimens

24. The required specimen for quantitative analysis of urinary constituents is the:

- A. Midstream clean-catch specimen
- B. First morning specimen
- C. Random specimen
- D. Timed specimen

ANS: D

DIF: Level 1

OBJ: 11

TOP: Types of specimens

25. A first morning specimen is frequently requested to confirm:

- A. Orthostatic proteinuria
- B. Fanconi's syndrome
- C. Urinary tract infection
- D. Antidiuretic hormone (ADH) deficiency

ANS: A

DIF: Level 1

OBJ: 11

TOP: Types of specimens

26. The first morning specimen from a patient with no history of symptoms for diabetes is positive for glucose. The patient should:

- A. Be given a glucose tolerance test
- B. Be asked to collect the second morning specimen
- C. Be asked to collect a timed specimen
- D. Be tested for renal tubular damage

ANS: B

DIF: Level 2

OBJ: 11

TOP: Types of specimens

27. The specimen of choice for routine urinalysis is the first morning urine because it:

- A. Has a high volume
- B. Is produced while the body is in a resting state
- C. Is more dilute to prevent false-positive reactions
- D. Is more concentrated to better detect abnormalities

ANS: D

DIF: Level 2

OBJ: 11

TOP: Types of specimens

28. All of the following specimens are acceptable for a urine culture *except*:

- A. Catheterized specimen
- B. Timed specimen

- C. Suprapubic aspiration
- D. Midstream clean-catch specimen

ANS: B

DIF: Level 1

OBJ: 11

TOP: Types of specimens

29. Quantitation of a substance that varies with daily activities should be performed on a:

- A. Timed overnight specimen
- B. First morning specimen
- C. 24-hour specimen
- D. 2-hour postprandial specimen

ANS: C

DIF: Level 2

OBJ: 11

TOP: Types of specimens

30. Failure to empty the bladder before beginning the collection of a timed urine specimen will:

- A. Cause falsely increased results
- B. Affect the preservation of glucose
- C. Cause falsely decreased results
- D. Adversely affect culture results

ANS: A

DIF: Level 2

OBJ: 10

TOP: Types of specimens

31. An alternative to the catheterized specimen is the:

- A. Fasting specimen
- B. First morning specimen
- C. Midstream clean-catch specimen
- D. Three glass collection

ANS: C

DIF: Level 1

OBJ: 11

TOP: Types of specimens

32. The least contaminated specimen for bacterial culture is the:

- A. Catheterized specimen
- B. Suprapubic aspiration
- C. Three glass collection
- D. Midstream clean-catch specimen

ANS: B

DIF: Level 2

OBJ: 11

TOP: Types of specimens

33. The three glass collection is used for the diagnosis of:

- A. Bladder cancer
- B. Urinary tract infection
- C. Diabetes mellitus
- D. Prostate infection

ANS: D

DIF: Level 1

OBJ: 11

TOP: Types of specimens

34. Documentation of appropriate handling of specimens for drug analysis is provided by the:

- A. Urinalysis supervisor
- B. Physician
- C. Temperature readings
- D. Chain of custody form

ANS: D

DIF: Level 1

OBJ: 11

TOP: Types of specimens

35. The liver breaks down protein to form what waste product?

- A. Urea
- B. Amino acids
- C. Sodium

D. Chloride

ANS: A

DIF: Level 1

OBJ: 1

TOP: Urinalysis composition

36. An increase in urine production during the night is described as:

A. Anuria

B. Oliguria

C. Polyuria

D. Nocturia

ANS: D

DIF: Level 1

OBJ: 3

TOP: Urine volume

37. Where should labels on urine specimen containers be placed?

A. Container

B. Lid

C. Bottom

D. Placement does not matter

ANS: A

DIF: Level 1

OBJ: 6

TOP: Specimen collection/handling

38. Increased turbidity in urine stored at room temperature is usually caused by:

A. Evaporation

B. White blood cells

C. Bacterial growth

D. Protein precipitation

ANS: C

DIF: Level 1

OBJ: 7

TOP: Specimen collection/handling

39. What is the maximum length of time a urine specimen can remain unpreserved at room temperature before testing?

- A. 30 minutes
- B. 2 hours
- C. 3 hours
- D. 6 hours

ANS: B

DIF: Level 1

OBJ: 8

TOP: Specimen collection/handling

40. Which specimen(s) from a three glass collection do(es) *not* have to be examined microscopically?

- A. #1
- B. #2
- C. #3
- D. All should be examined

ANS: B

DIF: Level 2

OBJ: 11

TOP: Types of specimens

Matching

State whether the following actions will cause false-positive or false-negative test results:

- A. False-positive
- B. False-negative

41. The temperature of a specimen for drug testing is 25°C when measured within 4 minutes of collection.

42. The second sample of a three glass collection has a positive urine culture.

43. A patient is deprived of fluids during a 6-hour timed urine collection.

44. Aliquots from 24-hour specimens are being obtained before measuring and mixing the sample.

41. ANS: B	DIF: Level 2	OBJ: 11	TOP: Types of
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			specimens case study
42. ANS: A	DIF: Level 2	OBJ: 11	TOP: Types of specimens case study
43. ANS: B	DIF: Level 2	OBJ: 11	TOP: Types of specimens case study
44. ANS: B	DIF: Level 2	OBJ: 11	TOP: Types of specimens case study

True/False

45. Urine contains organic and inorganic chemicals that can vary with body metabolic functions.

ANS: True

DIF: Level 1

OBJ:1

TOP: Urinalysis composition

46. Physicians performing urinalysis can determine whether a specimen is urine from the presence of formed elements.

ANS: False

DIF: Level 1

OBJ: 2

TOP: Urinalysis composition

47. Dietary intake does not influence urine volume.

ANS: False

DIF: Level 2

OBJ: 3

TOP: Urinalysis volume

48. Polydipsia is a symptom of both diabetes mellitus and diabetes insipidus.

ANS: True
DIF: Level 1
OBJ: 3
TOP: Urine volume

49. A urine specimen label should include the date and time of collection.

ANS: True
DIF: Level 1
OBJ: 5
TOP: Specimen collection/handling

50. Urine that remains unpreserved at room temperature will show an increase in the concentrations of nitrate, glucose, and white blood cells.

ANS: False
DIF: Level 1
OBJ: 7
TOP: Specimen collection/handling

51. A specimen delivered to the laboratory in a gray-top Vacutainer is acceptable for urinalysis.

ANS: False
DIF: Level 2
OBJ: 9
TOP: Specimen collection/handling

52. A urine bacterial culture should not be performed on a catheterized specimen.

ANS: False
DIF: Level 2
OBJ: 10
TOP: Types of specimens