

1.

A 24-year-old man comes to the ER with high blood glucose and low insulin levels. Which metabolic pathway is most likely active in this patient?

- A. Glycogenesis
- B. Glycolysis
- C. Glycogenolysis
- D. Lipogenesis

✓ Correct answer: C. Glycogenolysis

2.

A patient with uncontrolled type 1 diabetes mellitus presents with rapid breathing and fruity-smelling breath. Which mechanism is primarily responsible for his condition?

- A. Glycogenolysis
- B. Lipolysis
- C. Glycolysis
- D. Glycogenesis

✓ Correct answer: B. Lipolysis

3.

A patient presents with decreased aldosterone, low sodium, and high potassium. What is the most likely diagnosis?

- A. Secondary hyperaldosteronism
- B. Addison's disease
- C. Conn's syndrome
- D. Cushing's syndrome

✓ Correct answer: B. Addison's disease

4.

A 40-year-old man has fatigue, low blood pressure, high aldosterone, and high renin levels. Which of the following is the most likely cause?

- A. Conn's syndrome
- B. Addison's disease
- C. Secondary hyperaldosteronism
- D. Primary adrenal insufficiency

✓ Correct answer: C. Secondary hyperaldosteronism

5.

A patient has increased aldosterone and decreased renin levels.
Which condition is most likely?

- A. Addison's disease
- B. Conn's syndrome
- C. Secondary hyperaldosteronism
- D. Pheochromocytoma

✓ Correct answer: B. Conn's syndrome

6.

A hypertensive patient has uncontrolled blood pressure and high levels of epinephrine and norepinephrine.
Which condition is most likely?

- A. Conn's syndrome
- B. Addison's disease
- C. Pheochromocytoma
- D. Cushing's syndrome

✓ Correct answer: C. Pheochromocytoma

7.

Which hormone is responsible for activating gluconeogenesis, glycogenolysis, and lipolysis during fasting or stress?

- A. Insulin
- B. Glucagon
- C. Aldosterone
- D. Growth hormone

✓ Correct answer: B. Glucagon

8.

Which of the following metabolic processes is stimulated by insulin?

- A. Glycogenolysis
- B. Gluconeogenesis
- C. Lipolysis
- D. Glycogenesis

✓ Correct answer: D. Glycogenesis

9.

Which pathway is most likely to be inhibited by insulin?

- A. Glycolysis
- B. Glycogenesis
- C. Lipogenesis
- D. Gluconeogenesis

✓ Correct answer: D. Gluconeogenesis

10.

A patient with metabolic acidosis and history of type 1 diabetes is producing large amounts of ketone bodies.
This is due to increased:

- A. Glycogenesis
- B. Gluconeogenesis
- C. Lipolysis
- D. Glycolysis

✓ Correct answer: C. Lipolysis



1.

A 23-year-old woman presents with polyuria, polydipsia, nausea, and abdominal pain. Labs show:

- Glucose: 420 mg/dL
- pH: 7.1
- Serum ketones: positive
- HCO_3^- : low

Which metabolic pathway is most likely activated to cause this condition?

- A. Glycogenesis
- B. Glycolysis
- C. Lipolysis
- D. Gluconeogenesis

✓ Correct answer: C. Lipolysis

2.

A 35-year-old man with hypertension presents with headaches and palpitations. Labs show:

- Plasma metanephrines: ↑ ↑
- BP: 180/110 mmHg

What is the most likely diagnosis?

- A. Conn's syndrome
- B. Pheochromocytoma
- C. Addison's disease
- D. Hyperthyroidism

✓ Correct answer: B. Pheochromocytoma

3.

A 42-year-old woman with long-standing diabetes is brought in with confusion. Labs show:

- Glucose: 470 mg/dL
- Insulin: very low
- Ketones: positive
- Anion gap: increased

Which pathway caused the elevation in ketone bodies?

- A. Glycogenolysis
- B. Lipolysis
- C. Glycolysis
- D. Gluconeogenesis

✓ Correct answer: B. Lipolysis

4.

A patient presents with fatigue, weight loss, hypotension, and hyperpigmentation. Labs reveal:

- Na^+ : 126 mmol/L
- K^+ : 5.9 mmol/L
- Cortisol: low
- ACTH: high

What is the most likely diagnosis?

- A. Conn's syndrome
- B. Addison's disease (primary adrenal insufficiency)
- C. Secondary adrenal insufficiency
- D. SIADH

✓ Correct answer: B. Addison's disease

5.

A 38-year-old woman has high blood pressure and persistent hypokalemia.

Labs show:

- Aldosterone: high
- Renin: low

What is the most likely diagnosis?

- A. Conn's syndrome
- B. Secondary hyperaldosteronism
- C. Addison's disease
- D. Renal artery stenosis

✓ Correct answer: A. Conn's syndrome

6.

A 50-year-old male with uncontrolled hypertension is found to have:

- High renin
- High aldosterone
- Hypokalemia

Which of the following is the most likely underlying cause?

- A. Conn's syndrome
- B. Renal artery stenosis
- C. Adrenal carcinoma
- D. Addison's disease

✓ Correct answer: B. Renal artery stenosis

7.

In a fasting state, which of the following hormones is primarily responsible for activating gluconeogenesis and lipolysis?

- A. Cortisol
- B. Epinephrine
- C. Glucagon
- D. Insulin

✓ Correct answer: C. Glucagon

8.

A 19-year-old male athlete collapses during intense training. Labs reveal:

- Glucose: 55 mg/dL
- Insulin: undetectable
- Epinephrine: elevated

Which of the following best explains the role of epinephrine in this situation?

- A. Stimulates glycogenesis
- B. Inhibits gluconeogenesis
- C. Stimulates glycogenolysis and lipolysis
- D. Increases insulin secretion

✓ Correct answer: C. Stimulates glycogenolysis and lipolysis

9.

Which of the following effects is inhibited by insulin?

- A. Fatty acid synthesis
- B. Glucose uptake into muscle
- C. Glycogen synthesis
- D. Gluconeogenesis

✓ Correct answer: D. Gluconeogenesis

10.

A 26-year-old female presents with normal blood glucose, but very low insulin levels. Which of the following pathways is most likely decreased in her liver?

- A. Gluconeogenesis
- B. Lipolysis
- C. Glycogenesis
- D. Glycogenolysis

✓ Correct answer: C. Glycogenesis

