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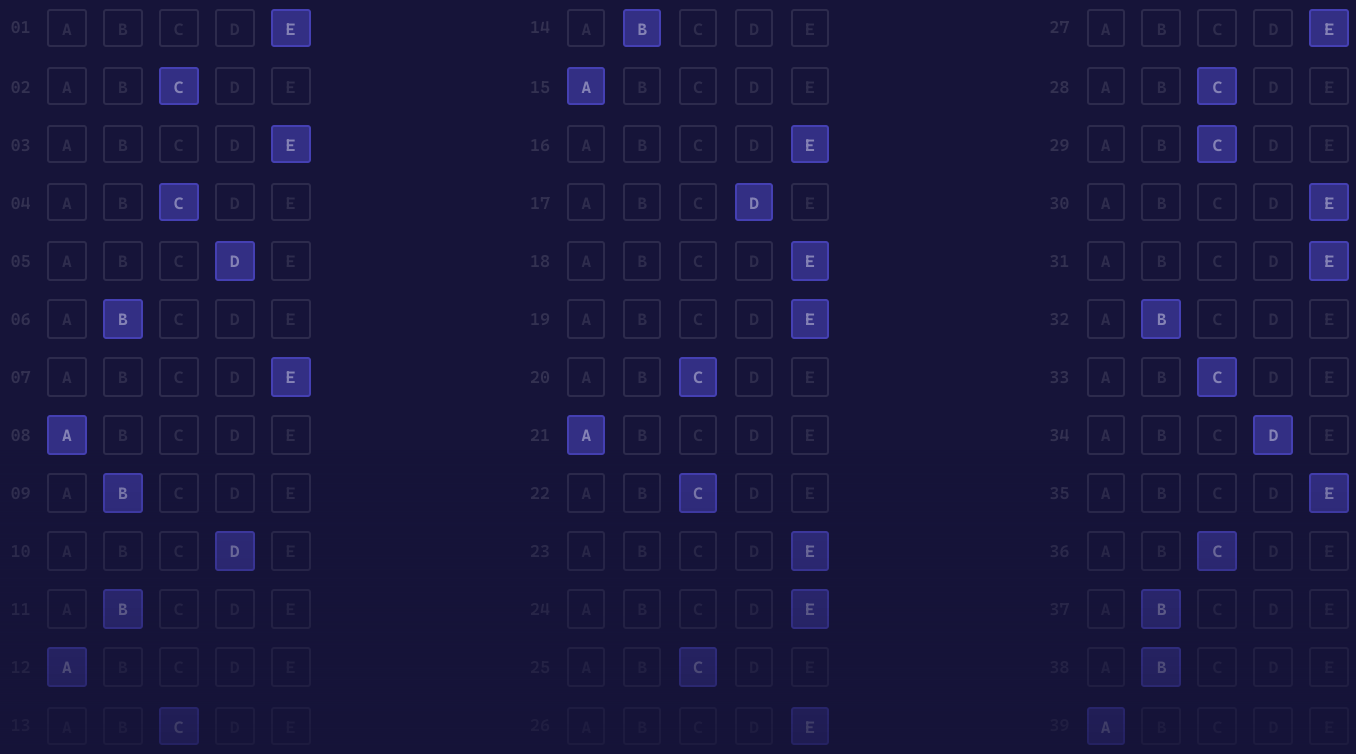

PRACTICE QUESTIONS

ABC-SD: South Dakota Department of Agriculture and Natural Resources

BMY5N3NT

South Dakota Wastewater Treatment Class 4

EDITION	QUESTIONS	FORMAT
Demo	9	Limited Edition PDF

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Before you begin

What this is

9 practice questions for ABC-SD: South Dakota Department of Agriculture and Natural Resources `BMY5N3NT`, each with its answer key and an explanation. Answer a question before you read its key — the explanation is worth more once you have committed.

If something looks wrong

Send us three things and we will check it:

- the exam code, `BMY5N3NT`
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

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QUESTION 1 SINGLE CHOICE

A Class 4 operator observes that the mixed liquor in an aeration basin has a dark, nearly black appearance and a sulfurous odor. Which condition should the operator investigate first?

A A normal increase in dissolved oxygen

B Septic or anaerobic conditions caused by inadequate aeration

C Excessive chlorination of the influent

D A normal increase in mixed liquor suspended solids

ANSWER B

WHY Dark mixed liquor and a sulfurous odor commonly indicate septic, anaerobic conditions, often associated with insufficient aeration or excessive organic loading. The operator should check aeration, dissolved oxygen, sludge condition, and process loading.

QUESTION 2 SINGLE CHOICE

During anaerobic digester operation, a sudden drop in pH accompanies an increase in volatile-acid-to-alkalinity ratio. What is the most appropriate operational response?

A Increase digester feeding immediately

B Reduce or stop feeding and assess the cause of organic overloading or digester upset

C Increase the final clarifier polymer dose

D Add more effluent to the digester without checking its temperature

ANSWER B

WHY A rising volatile-acid-to-alkalinity ratio with falling pH indicates an acidifying digester, commonly caused by overloading, inadequate mixing, temperature upset, or inhibition. Feeding should generally be reduced or stopped while the operator identifies and corrects the cause.

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QUESTION 3 SINGLE CHOICE

A treatment plant receives an average flow of 2.5 million gallons per day. What is the average flow rate in gallons per minute? (Use 1,440 minutes per day.)

A **1,736 gpm**

B 1,800 gpm

C 1,250 gpm

D 1,042 gpm

ANSWER **A**

WHY Convert million gallons per day to gallons per minute by dividing 2,500,000 gallons per day by 1,440 minutes per day, which equals approximately 1,736 gpm.

QUESTION 4 SINGLE CHOICE

An activated-sludge system has a rising effluent biochemical oxygen demand and a declining dissolved-oxygen concentration despite unchanged airflow. Which action is most appropriate?

A Increase the chlorination dose and take no further action

B **Check process loading, settleability, return sludge, and equipment operation before changing control settings**

C Immediately discharge the basin contents to bypass treatment

D Decrease sampling because the process will correct itself

ANSWER **B**

WHY Rising effluent BOD with declining dissolved oxygen suggests increased oxygen demand or impaired aeration. The operator should assess loading, mixed liquor settleability, return sludge, diffuser or blower performance, and other process indicators before making a corrective change.

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QUESTION 5 SINGLE CHOICE

What is the primary purpose of the primary clarifier in a conventional wastewater treatment plant?

A Remove dissolved minerals by ion exchange

B **Reduce settleable and floatable solids before biological treatment**

C Disinfect the final effluent

D Remove all biodegradable dissolved organic matter

ANSWER B

WHY Primary clarification removes readily settleable solids and floatable material, reducing the load delivered to biological treatment. It does not remove all dissolved organic matter or provide final disinfection.

QUESTION 6 SINGLE CHOICE

Before an operator enters a confined space that may contain hydrogen sulfide, what is the minimum safe practice?

A Enter alone if the odor is noticeable

B **Test and continuously monitor the atmosphere and follow the facility's confined-space entry and rescue procedures**

C Wear ordinary work gloves instead of respiratory protection

D Open the hatch and assume ventilation is adequate

ANSWER B

WHY Hydrogen sulfide is toxic and can quickly affect the sense of smell. Confined-space entry requires atmospheric testing, continuous monitoring when required, ventilation, appropriate protective equipment, and an approved entry-and-rescue plan.

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QUESTION 7 SINGLE CHOICE

A preventive-maintenance program should be designed primarily to:

A Eliminate the need to record equipment failures

B Identify and service equipment before failures disrupt treatment

C Replace every component on a fixed schedule regardless of condition

D Reduce the number of operators required per shift

ANSWER B

WHY Preventive maintenance identifies equipment-service needs before failure, helping maintain reliable treatment and reduce unplanned downtime. Records should still document inspections, failures, corrective work, and equipment condition.

QUESTION 8 SINGLE CHOICE

Which sampling practice provides the most representative measurement of a 24-hour composite influent sample?

A Collecting one grab sample at the shift change

B Collecting equal-volume samples at predetermined intervals and combining them in one container

C Collecting only the first flow after a rain event

D Collecting samples only when an operator notices an odor

ANSWER B

WHY A composite sample combines equal-volume portions collected at regular intervals or proportional to flow, providing a more representative average of changing influent conditions than a single grab sample.

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QUESTION 9 MULTIPLE CHOICE

Which two actions are appropriate when a laboratory result indicates an unexpected violation or process upset? (Choose two.)

A **Repeat or verify the sample and analytical result according to the facility's quality-control procedures**

B Immediately make a major process change without checking equipment or sampling integrity

C **Notify the responsible supervisor and document the condition and response**

D Ignore the result because one sample cannot establish a trend

ANSWER **A · C**

WHY An unexpected result should be verified or repeated using established quality-control procedures, and the condition should be reported and documented so that the operator can assess the process and take appropriate corrective action. An unverified major change or ignoring the result is not defensible.

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