

01	☐ A	☐ B	☐ C	☒ D	☐ E
02	☒ A	☐ B	☐ C	☐ D	☐ E
03	☐ A	☐ B	☒ C	☐ D	☐ E
04	☐ A	☐ B	☒ C	☐ D	☐ E
05	☐ A	☐ B	☒ C	☐ D	☐ E
06	☐ A	☐ B	☒ C	☐ D	☐ E
07	☐ A	☐ B	☐ C	☐ D	☒ E
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12	☒ A	☐ B	☐ C	☐ D	☐ E
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14	☐ A	☐ B	☒ C	☐ D	☐ E
15	☐ A	☐ B	☐ C	☒ D	☐ E
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27	☐ A	☐ B	☒ C	☐ D	☐ E
28	☒ A	☐ B	☐ C	☐ D	☐ E
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30	☐ A	☒ B	☐ C	☐ D	☐ E
31	☐ A	☒ B	☐ C	☐ D	☐ E
32	☐ A	☐ B	☐ C	☐ D	☒ E
33	☐ A	☐ B	☒ C	☐ D	☐ E
34	☐ A	☐ B	☒ C	☐ D	☐ E
35	☐ A	☐ B	☐ C	☒ D	☐ E
36	☐ A	☐ B	☒ C	☐ D	☐ E
37	☐ A	☐ B	☒ C	☐ D	☐ E
38	☐ A	☐ B	☐ C	☒ D	☐ E
39	☐ A	☐ B	☐ C	☐ D	☒ E

PRACTICE QUESTIONS

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

NGH9C7C5

South Dakota Wastewater Treatment Class 1

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for ABC-SD: South Dakota Department of Agriculture and Natural Resources **NGH9C7C5**, 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, **NGH9C7C5**
- the question number
- the email address on your order

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

QUESTION 1

MULTIPLE CHOICE

During routine operation of a sedimentation basin, which two observations most directly indicate that the clarifier may be approaching solids overload? (Choose two.)

- ☒ **A** Sludge blankets rise toward the effluent weirs
- ☐ **B** The dissolved oxygen concentration in the aeration basin increases
- ☒ **C** Effluent turbidity and suspended solids increase
- ☐ **D** The influent sewer becomes deeper without entering the plant
- ☐ **E** The bar screen's rake remains stationary during a low-flow period

ANSWER A - C

WHY A rising sludge blanket reduces effective settling depth and increases the likelihood of solids carrying over into the effluent. Increased effluent turbidity and suspended solids are also common indicators of clarifier solids overload. The other observations do not directly demonstrate overload in the sedimentation basin.

QUESTION 2

MULTIPLE CHOICE

Which two conditions commonly indicate an activated-sludge bulking problem? (Choose two.)

- ☒ **A** Poor sludge compaction and a high sludge volume index
- ☐ **B** A low mixed-liquor suspended-solids concentration caused only by dilution
- ☒ **C** Slow settling with a diffuse, poorly defined sludge blanket
- ☐ **D** Foam that dissipates immediately and contains no stable solids
- ☐ **E** Complete loss of the return-activated-sludge pumping capability

ANSWER A - C

WHY Bulking sludge settles slowly and compacts poorly, commonly producing a high sludge volume index and a diffuse sludge blanket. These conditions promote solids escape from the clarifier and increase process-control difficulty.

QUESTION 3

SINGLE CHOICE

An operator is checking a wastewater pumping station. Which action is the safest method for verifying that a pump motor is de-energized before beginning work?

- ☐ A Observe the motor from outside the station and assume it is stopped
- ☐ B Check only the local stop button without testing for voltage
- ☒ C Place the equipment in an electrically safe work condition, including lockout/tagout and verification of absence of voltage
- ☐ D Wait for the motor to cool before opening the disconnect

ANSWER C

WHY A stopped control button or visual observation does not establish that all hazardous energy has been isolated. The motor must be placed in an electrically safe work condition through the facility's lockout/tagout process, with each energy source isolated and an appropriate test used to verify the absence of voltage before work begins.

QUESTION 4

SINGLE CHOICE

A treatment plant's aeration basin is operating with a dissolved oxygen concentration near zero throughout most of the basin. What is the most appropriate immediate operational response?

- ☒ A Increase aeration and verify that the air-delivery equipment is operating
- ☐ B Reduce the return-activated-sludge flow to prevent excessive solids
- ☐ C Increase the chlorine dose to the final effluent
- ☐ D Close the bar screen bypass

ANSWER A

WHY Persistent near-zero dissolved oxygen indicates inadequate aeration or excessive biological oxygen demand. Increasing aeration and checking the air-delivery system addresses the immediate oxygen deficit, while the other choices concern unrelated processes.

QUESTION 5

SINGLE CHOICE

A composite sampler is being programmed to characterize wastewater flow over an entire 24-hour period. Which sampling approach is most appropriate?

- ☒ **A** Collect equal-volume samples at uniform time intervals and combine them into one composite sample
- ☐ **B** Collect one grab sample only when the operator begins the shift
- ☐ **C** Collect samples only during the period of highest observed flow
- ☐ **D** Collect equal-volume samples at random times without recording the sampling schedule

ANSWER A

WHY A time-proportional composite combines equal-volume samples collected at uniform time intervals. This produces a sample that represents changes in wastewater characteristics across the complete sampling period. Grab or selectively timed samples can miss significant variations.

QUESTION 6

SINGLE CHOICE

Which operating condition most directly reduces the effectiveness of chlorination used to disinfect wastewater effluent?

- ☒ **A** High organic demand that consumes available chlorine before disinfection is complete
- ☐ **B** A chlorine contact basin with uniform flow distribution
- ☐ **C** An effluent pH maintained within the control range established by the facility
- ☐ **D** A properly operating residual-chlorine monitoring system

ANSWER A

WHY Organic matter can exert a chlorine demand, consuming disinfectant before an adequate residual or contact time is achieved. Uniform flow, controlled pH, and reliable residual monitoring support effective disinfection rather than undermining it.

QUESTION 7

SINGLE CHOICE

What is the primary operational purpose of a bar screen at the headworks of a wastewater treatment plant?

- ☒ **A Remove large solids and debris before they enter downstream treatment equipment**
- ☐ B Add dissolved oxygen to the incoming wastewater
- ☐ C Disinfect the final effluent before discharge
- ☐ D Remove dissolved salts through reverse osmosis

ANSWER A

WHY Bar screens protect pumps and downstream piping and treatment units by removing large solids and debris from influent wastewater. Oxygen addition, final disinfection, and reverse osmosis are performed by other processes.

QUESTION 8

SINGLE CHOICE

Why must solids removed from a sedimentation basin be withdrawn regularly?

- ☒ **A To prevent excessive sludge accumulation, loss of settling capacity, and carryover into the effluent**
- ☐ B To increase the amount of dissolved oxygen entering the headworks
- ☐ C To eliminate the need for disinfection of the final effluent
- ☐ D To prevent bar-screen debris from reaching the influent channel

ANSWER A

WHY Timely solids withdrawal controls the sludge blanket and preserves effective clarification. Excessive accumulation reduces settling volume and can cause settled solids to escape over the effluent weirs. The other options describe processes unrelated to routine sludge removal.

QUESTION 9

SINGLE CHOICE

Which inspection activity is most important for a preventive-maintenance program for rotating wastewater equipment such as pumps and blowers?

- ☒ **A** Checking lubrication, seals, bearings, vibration, temperature, and operating condition according to the equipment manufacturer's guidance
- ☐ **B** Repainting the equipment only after a visible leak has caused a process failure
- ☐ **C** Replacing all electrical cables whenever the influent flow changes
- ☐ **D** Operating the equipment at its maximum rated capacity during every shift

ANSWER A

WHY Rotating equipment should be inspected routinely for lubrication and seal condition and monitored for abnormal vibration, temperature, noise, and operating performance. Preventive maintenance based on manufacturer guidance helps detect deterioration before failure; reactive repair and operation at maximum capacity are not sound maintenance practices.