FORM
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JEFFERSON COUNTY PUBLIC HEALTH
Environmental Health Services Division

645 Parfet Street, Lakewood, CO 80215
(303) 232-6301 FAX (303) 271-5760
jeffco.us/public-health

FORM
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INDIVIDUAL SEWAGE DISPOSAL SYSTEM CONTRACTOR LICENSE - Application and Instructions

In accordance with Colorado state law, the Jefferson County Department of Health and Environment is now required to verify that persons applying for certain licenses are LAWFULLY PRESENT in the United States. Use Department FORM A to document this requirement.

USE THIS PACKET TO APPLY FOR A LICENSE TO INSTALL, REPAIR AND RENOVATE INDIVIDUAL SEWAGE DISPOSAL SYSTEMS IN JEFFERSON COUNTY COLORADO. ONLY ONE EMPLOYEE OF A FIRM IS REQUIRED TO HOLD A SYSTEM CONTRACTOR LICENSE.

INSTRUCTIONS

- The test for an individual sewage disposal system contractor license consists of 68 fill-in and multiple-choice questions totaling 100 possible points.
- Minimum passing grade is 75%. If you receive less than 75% you must meet with the test coordinator to discuss your answers.
- The test is based upon the Jefferson County Individual Sewage Disposal System Regulations and is OPEN BOOK. You may purchase a copy of the Regulations for $10.00 (hard copy or CD-ROM) or review them online at:

http://jeffco.us/jeffco/health_uploads/ehs/FINAL_COPY_ISDS_Regs_PDF_VERSION.pdf

To apply for your license, return the following to the Department:

- Completed application form (page 1),
- Test answer key (page 11),
- License fee of **$50.00 payable to Jefferson County Treasurer**, and
- Unless your business is a **PARTNERSHIP** or a **CORPORATION** on record with the Colorado Secretary of State, you must also submit **FORM A** to document your lawful presence in the United States.

Allow approximately ten (10) working days to process your application. Licenses are valid for a calendar year and expire on December 31. Licenses must be renewed prior to December 31 of each year.

DEPARTMENT CONTACTS Mike Davis (303) 271-5771
mdavis@jeffco.us

(For renewals) Linda Jones (303) 271-5756
jonelj@jeffco.us

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JEFFERSON COUNTY PUBLIC HEALTH
645 PARFET STREET LAKEWOOD, CO 80215
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APPLICATION FOR INDIVIDUAL SEWAGE DISPOSAL SYSTEM CONTRACTOR LICENSE

( ) **NEW** **$50.00** ( ) **RENEWAL** **$25.00**

Note: Regardless of the date issued, all licenses expire on **Dec. 31** of each year. Renewal applications are sent to current contractors in early December and must be postmarked by **January 1** or else the NEW fee will be charged.

OWNER'S NAME_____

BUSINESS NAME_____

ADDRESS _____
CITY ZIP CODE

PHONE # _____ FAX #_____ CELL#_____

EMAIL: _____

If the owner is a **CORPORATION**, list all officers with title. If a **PARTNERSHIP**, list names and addresses of general partners. If a **SOLE PROPRIETORSHIP**, you must attach **FORM A.**

NAME _____
ADDRESS _____
_____

NAME _____
ADDRESS _____
_____

REGISTERED AGENT: _____

PHONE # _____

THE UNDERSIGNED HEREBY AGREES TO CONDUCT ALL OPERATIONS IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS PERTAINING TO INDIVIDUAL SEWAGE DISPOSAL SYSTEMS IN JEFFERSON COUNTY, COLORADO.

_____ _____
Applicant's signature & title Date

INSTRUCTIONS for TAKING THIS TEST

This is an open book test and you may use a copy of the current Jefferson County Individual Sewage Disposal System Regulations when taking it. The test may be taken at our offices or returned to us after you have completed it.

Unless otherwise instructed, mark only the **MOST CORRECT** answer for each question.

You may mark on the question form, but please record all your answers on the **ANSWER FORM**.

100 POSSIBLE POINTS
MINIMUM PASSING SCORE IS 75

1. An individual sewage disposal system permit is required (mark all that apply):
   a) to add an extension on to a failing absorption bed
   b) to replace a damaged septic tank
   c) to dig percolation and profile test holes
   d) to replace a broken line or pipe

2. The inspection log form that accompanies the permit is to be:
   a) given to the property owner for their records after the work is done
   b) posted conspicuously on the site when system construction begins
   c) kept in the contractor's office and returned to the Health Department upon completion of the system
   d) recycled

3. The individual sewage disposal system is considered to be installed and accepted for use when:
   a) the final grading of the absorption bed has been completed
   b) the design engineer makes his final inspection
   c) the system has been back-filled and the health officer (inspector) signs the approval statement on the bottom of the permit
   d) the Certificate of Occupancy is issued

4. A sturdy aluminum ladder is an acceptable means of access for an inspector to enter the excavation for an inspection.
   T F

5. There is an automatic thirty-day grace period after a permit expires to start the installation of the proposed system.
   T F

6. All employees of a systems contractor must take and pass this contractor licensing examination.
   T F

7. The specific conditions set forth on an individual sewage disposal system permit are the only ones applicable to the installation of that particular system.
   T F

8. If your systems contractor license has been expired for more than six (6) months you will be required to re-take the current licensing test.
   T F

9. If the regulations are revised, permits issued prior to that revision are subject to any new requirements of that revision.
   T F

10. As a licensed contractor, you can also be a subcontractor for a homeowner who wants to install their own permitted system.
    T F

11. Having a systems contractor license also permits you to perform inspections for Use Permits under Part IX of the ISDS regulations.
    T F

12. If prior to or during construction you discover that a new well has been drilled on an adjacent lot less than 200 feet from the absorption bed you are installing, you should:
    a) proceed to install the system where it was staked since you have a valid permit
    b) notify the design engineer of the problem and proceed with the installation
    c) tell the other property owner he must move his well or else
    d) notify the Health Department of the problem and halt (or do not begin) construction until the problem has been corrected

13. It is permissible to substitute a gravel-less or chambered system for a permitted absorption bed if the permit holder asks you to do so.
    T F

14. Which of the following documents must be available for inspection at the site (mark all that apply):
    a) the individual sewage disposal system permit
    b) the engineering design
    c) a copy of the individual sewage disposal system regulations
    d) a copy of the well permit

15. If, during the preliminary inspection, the inspector leaves a note that the size of the absorption system is insufficient, you should
    a) increase the size of the excavation, then complete the installation
    b) increase the size of the excavation and have the engineer verify the new size
    c) increase the size of the excavation and call for a re-inspection by the Health Department
    d) ask the homeowner what they want you to do and follow their instructions

16. You are installing a system for a four bedroom single family dwelling when the owner asks you to put in a smaller tank and field, saying he has decided to build a three bedroom dwelling instead. You should:

    a) go ahead and do it – after all, it's their system you're working on
    b) go ahead and do it and then notify the engineer
    c) go ahead and do it then notify the health department
    d) tell the owner they must contact the engineer for a revised design and wait for a revised permit from the health department before you can do the work

17. Cast iron pipe may be used:

    a) whenever you run out of plastic pipe
    b) between a tank and absorption bed
    c) only when it is a requirement of the building code
    d) under asphalt driveways

18. A distribution box (mark all which apply):

    a) must have the inlet invert at least 1" above the outlet invert
    b) must be set level on a compacted base or concrete slab
    c) must be placed on a gravel bed at least six inches deep to prevent shifting
    d) must distribute effluent evenly throughout the absorption area unless specified by the design engineer

19. A building sewer less than 100 feet in length does not require a clean-out.

    T F

20. Between the dwelling and septic tank, the building sewer shall (mark all which apply):

    a) have bends limited to 45-degree ells or long-sweep quarter bends
    b) not exceed 4% grade for the 5 feet prior to the tank
    c) have clean-outs every 100 feet
    d) have a grade of not less than 10%

21. The line between the structure and a gray water septic tank must be 4 inches in diameter.

    T F

22. A water line, sewer line crossing must be constructed (mark all that apply):

    a) of sufficient strength to contain flows under pressure
    b) with the water line at least four feet above the sewer line
    c) with the sewer line double cased with the closest joint at least 10 feet from the point of crossing the water line
    d) water line-sewer line crossings are not permitted

23. If necessary, you can set forms and cast a 2000-gallon tank on the site.

    T F

24. The engineering for a particular permitted system includes a 3-compartment tank with a pump in the last compartment. You may substitute a 2-compartment tank with a screened vault dosing siphon without consulting the Department since it also meets the requirements of the ISDS regulations.
    T F

25. A dosing or pumping system may be placed in the second compartment of a septic tank provided it is contained in a screened vault, and the volume of the tank after the pump or dose cycle is not less than the required 30 hours retention time for septic tanks.
    T F

26. All new septic tanks for absorption systems must be equipped with a pump or dosing siphon.
    T F

27. For sealing the septic tank, caulk or grouting should be placed (mark all that apply):
    a) between the tank top and tank body
    b) around the inlet and outlet pipes
    c) between the tank top and lowest riser section
    d) between all riser sections

28. You notice that the concrete septic tank that has been delivered appears to have cracks in it. You should:
    a) patch the cracks as best you can and install it anyway
    b) install the tank and backfill it so that the sewage solids will prevent leakage
    c) have the tank leak-tested to verify that it is water-tight prior to installation
    d) notify the Health Department of the problem

29. One correct procedure for abandoning a septic tank is to pump, backfill with inert material, then cap the inlet and outlet lines.
    T F

30. Septic tanks:
    a) must be set level on a compacted base
    b) must be transported and set per manufacturer's specifications
    c) must be placed on a gravel bed to prevent shifting
    d) may be made of cinderblocks, if properly coated and sealed

31. What is the minimum separation distance between the septic tank and (fill in blanks):

a)	a well	_____ ft	d)	a dwelling	_____ ft
b)	a water line	_____ ft	e)	an absorption bed	_____ ft
c)	surface water	_____ ft	f)	a property line	_____ ft

32. The lids of a septic tank shall be placed:
    a) at finished grade
    b) no more than 6 inches below finished grade
    c) no more than 8 inches below finished grade
    d) no more than 12 inches below finished grade

33. A replacement septic tank does not require either pumping or dosing.
    T F

34. If a permitted design calls for the placement of a single compartment 1000 gallon tank and 1000 gallon 2-compartment tank in series, it does not matter which tank comes first.
    T F

35. Staked bales of straw or silt fences are acceptable materials for constructing berms.
    T F

36. During installation, soil particles must be kept out of the gravel layer of an absorption bed because (mark all that apply):
    a) it reduces the amount of water the gravel will hold
    b) it will cause uneven settling
    c) it will promote root growth in the gravel layer
    d) the inspector will not approve dirty gravel

37. At least one (1) distribution line is required for every _____ feet of the width of the absorption bed or fraction thereof.

38. The perforated pipe sections in the absorption beds should:
    a) be left unglued to allow for expansion
    b) be placed with the stenciled printing facing up
    c) be placed with the holes facing up
    d) be placed with the holes facing down, equally offset from the bottom of the pipe

39. In installing a system with 3 standard trenches, the trench cannot exceed (a) _____ in width and the side-walls of each trench must be at least (b) _____ apart.

40. What is the minimum separation distance between an absorption bed and (fill in blanks):

a)	a well	_____ ft.	d)	a dwelling	_____ ft.
b)	a dry gulch	_____ ft.	e)	a water line	_____ ft.
c)	surface water	_____ ft.	f)	a property line	_____ ft.

41. Which of the following are acceptable gravel specifications for absorption systems (mark all that apply):

    a) D-57 special
    b) ASTM D448-86 #2
    c) "Pea Gravel"
    d) gravel passing a 2.5 inch screen and retained on a 0.5 inch screen

42. To be approved for installation, gravel must be washed.

    T F

43. To answer this question, examine the cross-sectional drawings on Page 10. Since the regulations require a total gravel depth of twelve (12) inches across the bed or trench, circle the letter below which shows the correct placement of pipe and gravel in an absorption trench.

    a) b) c)

44. Assuming that you must install a 720 square foot absorption bed and that suitable gravel weighs 1700 pounds per cubic yard (27 cubic feet = 1 cubic yard), what is the minimum number of tons of gravel that will be required for this absorption bed?

    a) 22.6 tons
    b) 226 tons
    c) 72 tons
    d) 720 tons

45. Which of the following materials may be used for covering the gravel layer in an absorption bed? (Mark all that apply)

    a) hay or straw
    b) untreated building paper
    c) synthetic pervious materials
    d) PVC film

46. In an absorption bed, the distribution lines should be placed no farther than (a) _____ from the side walls of the excavation and not more than (b) _____ apart.

47. Systems with over-excavated absorption beds are required:

    a) on all systems installed over 6000 ft elevation
    b) in clay soils
    c) when it is a condition of the permit
    d) for all commercial uses

48. On systems that require an over-excavated absorption bed, the required depth will be measured:

    a) at the deepest point of the excavation
    b) at the deepest point on the up-slope wall of the excavation
    c) at the shallowest point along the down-slope wall of the excavation
    d) from the comfort of our air-conditioned trucks

49. A monitoring pipe must be installed in the absorption system to permit observation of conditions within the gravel layer.

    T F

50. After the inspector has approved the open excavation, you notice that water is pooled in the bottom, although there has been no rain or snow. You should:
    a) backfill the excavation since it was already approved
    b) pump out the water and then backfill the excavation
    c) stop work and notify the engineer about the problem
    d) stop work and notify the health department about the problem

51. When installing a drip irrigation system, what is the minimum depth at which the distribution lines may be placed?
    a) 6 inches
    b) 12 inches
    c) 24 inches
    d) There is no minimum specified depth

52. Chamber-type absorption systems require an internal distribution pipe.
    T F

53. A water softener backwash line must be connected to a septic system.
    T F

54. An existing absorption or evaporation system may be abandoned in place by locating and capping the inlet line.
    T F

55. The proper method of leveling the final backfill cover is to drive over it repeatedly with heavy equipment.
    T F

56. Due to steep topography, the individual sewage disposal permit requires that a liner be installed. The liner should be at least (A) _____ mil thick and installed so that it covers (mark all that apply:
    a) the up-slope wall of the excavation
    b) the bottom of the excavation
    c) the down-slope wall of the excavation
    d) the ends of the excavation

57. If the permit calls for the installation of an alarm in a vault or holding tank, the alarm must be triggered when the tank reaches _____% of its capacity.

58. An alarm box must only be installed inside the dwelling that is served by the individual sewage disposal system.
    T F

59. Contaminated soil removed from an old absorption bed should be disposed of in the following manner:
    a) mixed with fresh soil and used as filter material in the new absorption bed
    b) the soil may be spread out to dry onsite
    c) the soil may be used as fill around the foundation of the house
    d) the soil may be used in the replacement absorption bed

60. The correct procedures for abandoning a pit privy are as follows (mark all that apply):
    a) the pit should be pumped, if possible, treated with slaked lime or other disinfectant, then filled with earth or other inert materials
    b) the stool seat may remain in place
    c) the pit may be covered with a piece of sturdy plywood
    d) the pit may be left open to dry out on its own

61. The system you are installing calls for a subsoil (lined curtain) drain to be placed up-slope from the absorption bed. What is the minimum setback to the bed?
    a) 10 feet
    b) 25 feet
    c) 4 X the depth of the bed
    d) 2 X the width of the bed

62. Blasting is permitted to install an individual sewage disposal system under what conditions (mark all that apply):
    a) when the system cannot be excavated without it
    b) when it is allowed as a permit condition based on a blasting report
    c) when the nearest well is greater than 200 feet from the blast site
    d) when you yell "*fire in the hole!*" before setting off the charges

63. If you are also working on the house, you can blast to excavate the foundation even if the septic permit prohibits blasting.
    T F

64. A sewer line may be placed less than 50 feet from a well if those portions of the line within 50 feet are double-cased.
    T F

65. Non-perforated ASTM D2729 pipe can be used between the house and the septic tank.
    T F

66. It is acceptable practice to connect the floor drain of a garage into an individual sewage disposal system.
    T F

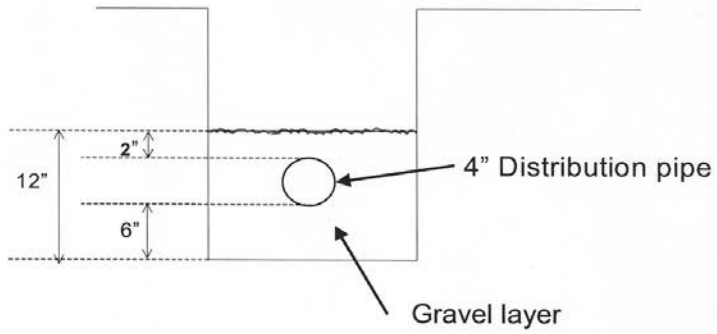
67. Vaults are to be installed so that the top of the vault is at least (a) _____ below the top of the gray water tank (horizontally) and the tanks are at least (b) _____ apart.

68. Before bedding pipe, it is necessary to fill in all voids below the pipe, even if the ground is frozen.

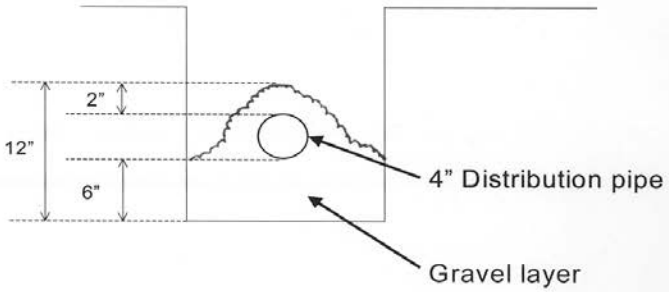
T F

Use these figures to answer Question #43

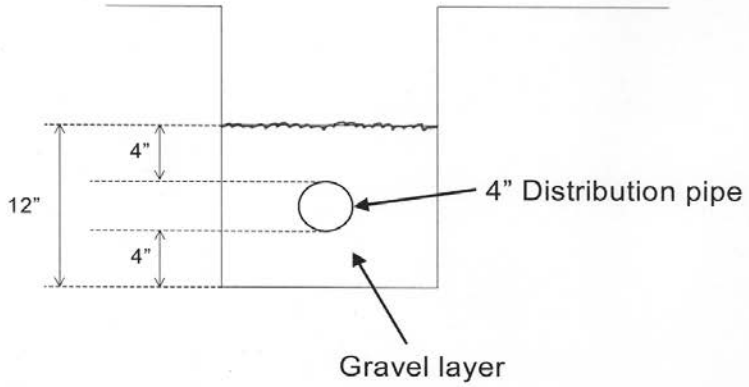
a)



b)



c)



Jefferson County Department of Health and Environment
ISDS Contractor Test Answer Form

APPLICANT NAME: _____ DATE_____

Please circle correct answer(s) or fill in blanks as directed by the question form:

1. a b c d
2. a b c d
3. a b c d
4. T F
5. T F
6. T F
7. T F
8. T F
9. T F
10. T F
11. T F
12. a b c d
13. T F
14. a b c d
15. a b c d
16. a b c d
17. a b c d
18. a b c d
19. T F
20. a b c d
21. T F
22. a b c d
23. T F
24. T F
25. T F
26. T F
27. a b c d
28. a b c d
29. T F
30. a b c d
31. a _____ c _____ e _____
    b _____ d _____ f _____
32. a b c d
33. T F
34. T F
35. T F
36. a b c d
37. _____
38. a b c d
39. (a) _____ (b) _____
40. a _____ c _____ e _____
    b _____ d _____ f _____
41. a b c d
42. T F
43. a b c
44. a b c d
45. a b c d
46. (a) _____ (b) _____
47. a b c d
48. a b c d
49. T F
50. a b c d
51. a b c d
52. T F
53. T F
54. T F
55. T F
56. (A) ____ a b c d
57. ____
58. T F
59. a b c d
60. a b c d
61. a b c d
62. a b c d
63. T F
64. T F
65. T F
66. T F
67. (a) _____ (b) _____
68. T F

SCORE: _____ (75 needed to pass)

Date: _____

Graded by: _____

Comments: _____

_____

_____

_____

_____