

EXERCISE COILED TUBING EQUIPMENT 2

1. Below is a coiled tubing motor assembly. We decided to include a circulating sub, to ensure we can circulate above the motor when so required. List the assembly you would run, from top to bottom, starting with the CT Connector.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____



NOTE: Do NOT mention the individual parts of the Motor i

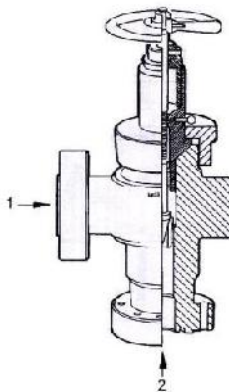
2. What do we mean when we talk about a 7-1/16" by 10,000 psi API-Flange?

Answer: _____

3. A coiled tubing rig up includes a choke line and choke manifold. There are two choke line gate valves before [upstream of] the choke. One is a hydraulically controlled and another one is manually operated. On which side should the manually operated valve be positioned?

Answer: _____

4. Below is a typical adjustable choke on coiled tubing rig up.

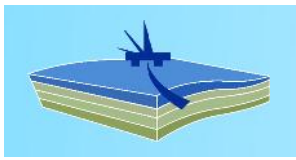


Match the number with the correct designation below.

INLET _____

OUTLET _____





5. What pressure does the manufacturer use to test the body [not the rams!] of a new 15,000 psi working pressure BOP?

Answer: _____

6. Coiled Tubing Barrier Principle:
Name the correct barrier for coiled tubing operations, both for external and internal pipe pressure controls: -

	External Pipe Pressure Control	Internal Pipe Pressure Control
▪ Primary Barrier	_____	_____
▪ Secondary Barrier	_____	_____
▪ Tertiary Barrier	_____	_____

7. What is the critical advantage that the flapper type of check valve has over the ball and seat type of check valve?

- a) Flapper valve closes faster
- b) Flapper valve requires less maintenance
- c) Ball, plug and dart can be pumped through them to activate other tools in the BHA
- d) Flapper valve has a higher rated working pressure

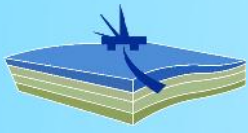
8. Which of the following may be indications that the CT has parted in the well? (TWO ANSWERS)

- a) Inside chain tension changes
- b) Choke pressure will increase
- c) Pump pressure shows a change
- d) Weight indicator shows a change
- e) Stripper pressure shows a change

9. With the CT across the X/mas tree in a high pressure-live well, the CT parts between the reel and the gooseneck. The check valves do not seem to hold pressure. Which of the following actions would then be the most appropriate to take immediately?

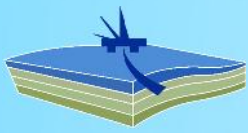
- a) Observe the flow first and evacuate all non-essential personnel from the worksite.
- b) Kill the well by bull heading down the CT annulus.
- c) Cut the CT using the Shear/Seal BOP.
- d) Phone the company man for approval to close the BOPs.





10. With coiled tubing in the hole, it is observed that the connection between the Quad BOP and the Stripper is leaking. Which secondary barrier must be closed to allow the leak to be repaired?
- Blind Ram
 - Pipe Ram
 - Swab valve
 - Upper Master Valve
 - DHSV
11. What are the advantages of a Combi-BOP in CT operations? (THREE ANSWERS)
- It reduces the stack height
 - It is more flexible than any other BOP
 - It is easier to activate the functions
 - It minimizes the steps for BOP operations
 - It is no longer necessary to use Shear/Seal [Safety Head] on the Xmas Tree
12. If a small but deep crack is found in the body of a CT BOP, which is brand new and has never been used before, what should we do?
- It is OK. It can be used some time longer since it is a brand new BOP.
 - Change the ram assembly before continuing with the operations.
 - Contact the OEM to perform a repair and then re-certificate it before use.
13. If during CT operations a leak occurs across the riser connection but below the shear rams of the Quad BOP, which one of the following is correct action?
- Close the Annular BOP
 - Close the SCSSV
 - Pick up CT +/- 10 ft and shear the tubing with the Shear/Seal BOP
 - Close the Swab Valve
14. We are using CT to clean out the well using inhibited seawater. A pin hole is detected on the CT between the gooseneck and reel level wind. What should we do to secure the well in a safe manner and bring it back to normal condition?
- Run in the CT until pinhole is below stripper but above BOPs, confirm BPVs are holding, then close the BOP Rams, lock and inflow test. Review situation.
 - Stop CT, stop pump, remove non-essential personnel from that area
 - If leak is getting worse by the minute, stop pump, POOH with CT until pinhole is located back on CT reel and repair CT with tube-to-tube connector
 - Run in the CT until pinhole is inside the stripper, close the Shear/Seal BOP





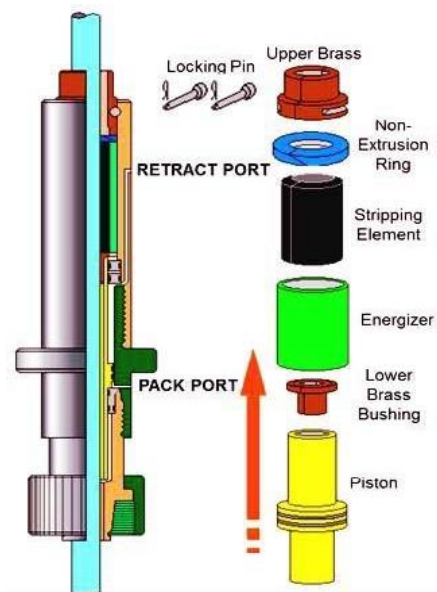
15. What is the best description of a 'CT Deployment System'?

- a) It is a means of running or feeding a very long BHA into the live well.
- b) It is a means of running or feeding a very long BHA into the Injector Head.

16. Where is the correct location of an adjustable choke on coiled tubing rig up?

- a) Where the fluid exits the completion/casing annulus
- b) Where the fluid exits the completion/tubing annulus

17. Have a look at the drawing:



How is this 'STRIPPER' energized?

- a) Hydraulic pressure is applied to the lower bushing and this compresses the packing upwards.
- b) Hydraulic pressure is applied to the upper bushing and this compresses the packing downwards.
- c) Well head pressure will pack the packer without any assistance of hydraulic pressure.
- d) Hydraulic pressure is applied to the well head pressure port and this compresses the packing upwards

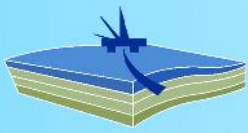
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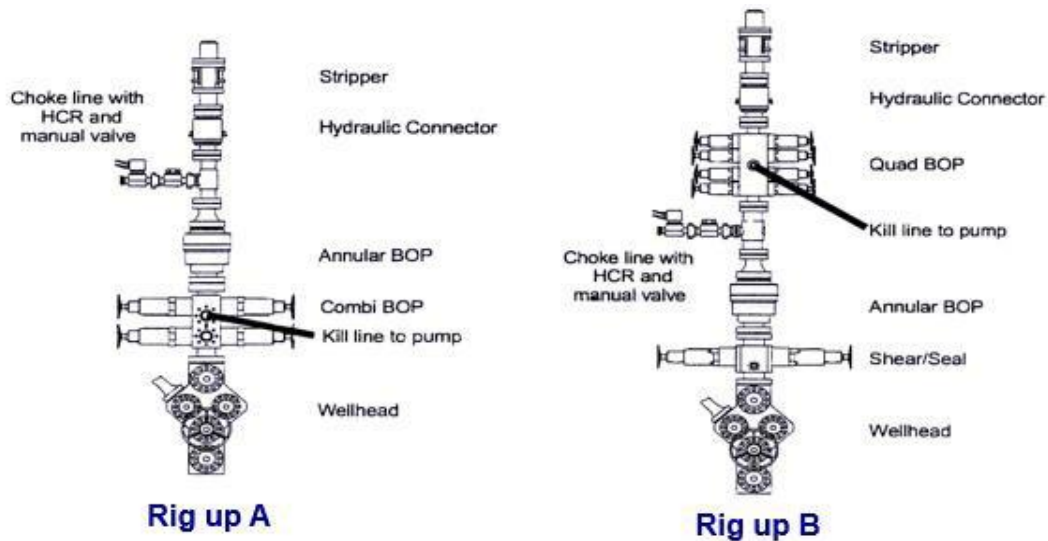




19. Have a look at the drawing:

If the choke line valves are leaking, which rig up will allow you to have two barriers closed while repairing the leak with coiled tubing in the hole?

- a) Rig up A
- b) Rig up B



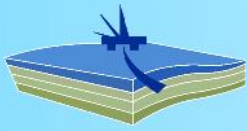
20. Referring to Question 19, if the stripper elements are worn out and need to be changed, which rig up would allow you to secure the well with two barriers closed while changing the strippers:

- a) Rig up A
- b) Rig up B
- c) Both

21. Have a look at the drawing. Name the type of CT Stripper as shown in the pictures:



- A. _____
- B. _____
- C. _____

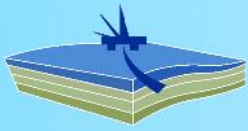


WORKBOOK COILED TUBING EQUIPMENT – ANSWER KEYS

EXERCISE COILED TUBING EQUIPMENT-1	
1.	a, b, c
2.	b
3.	c
4.	b
5.	b
6.	d
7.	c
8.	b
9.	a
10.	d
11.	Stripper Type: Conventional Stripper How to energize: Hydraulic pressure and also well pressure (if increased) are applied to the lower bushing, compressing the Energizer <u>upwards</u>
	Stripper Type: Side Door Stripper How to energize: Hydraulic pressure is applied to the upper bushing, compressing the Energizer <u>downwards</u>
12.	c
13.	b, c

EXERCISE COILED TUBING EQUIPMENT-2	
1.1	CT Connector
1.2	Back Pressure Valve 1
1.3	Back Pressure Valve 2
1.4	Release Joint or Safety Valve
1.5	Circulating Sub enabling By-Pass Flow
1.6	Motor, Stabilizer, Bit
2.	Flange has 7-1/16" thru-bore and 10,000 psi working pressure rating
3.	On the upstream side, i.e. the first valve from the well
4.	INLET: 1 and OUTLET: 2
5.	22,500 psi
6.	Primary Barrier: <u>External</u> : Stripper & Annular + <u>Internal</u> : Dual Check Valves
	Secondary Barrier: <u>External</u> : BOPs [Safety Ram] + <u>Internal</u> : Cutter Ram [Shear Ram]
	Tertiary Barrier: <u>External</u> : Shear/Seal + <u>Internal</u> : Shear/Seal
7.	c
8.	c, d
9.	c





10.	b
11.	a, c, d
12.	c
13.	c
14.	a
15.	a
16.	b
17.	a
18.	b
19.	a
20.	c
21a.	Conventional Stripper
21b.	Radial Stripper
21c.	Side Door Stripper

EXERCISE COILED TUBING EQUIPMENT-3

1.	b, c
2.	a
3.	a, b
4.	c
5.	e
6.	b
7.	a

EXERCISE COILED TUBING EQUIPMENT-4

1.	d
2.	b
3.	c
4.	a
5.	c
6.	d
7.	a
8.	b
9.	c
10.	b
11.	a, c, e
12.	a, c, d
13.	c
14.	d
15.	d

