



Ministry of Higher Education & Scientific Research
Misurata University - Libya

PE-311 Drilling and Production Machinery
Time: 3 Hours
Spring 2015/2016

Final Exam
Date: 26/05/2016
Prof. Dr. Ali Elsaeh Enbaia

Answer all Questions

Questions	Marks
Question 1	/ 10
Question 2	/ 15
Question 3	/ 13
Question 4	/ 12
Total	(/ 50)

Student Name:	
Student ID:	

Ministry of Higher Education & Scientific Research
Misurata University - Libya

PE-311 Drilling and Production Machinery
Time: 2 Hours
Spring 2015/2016

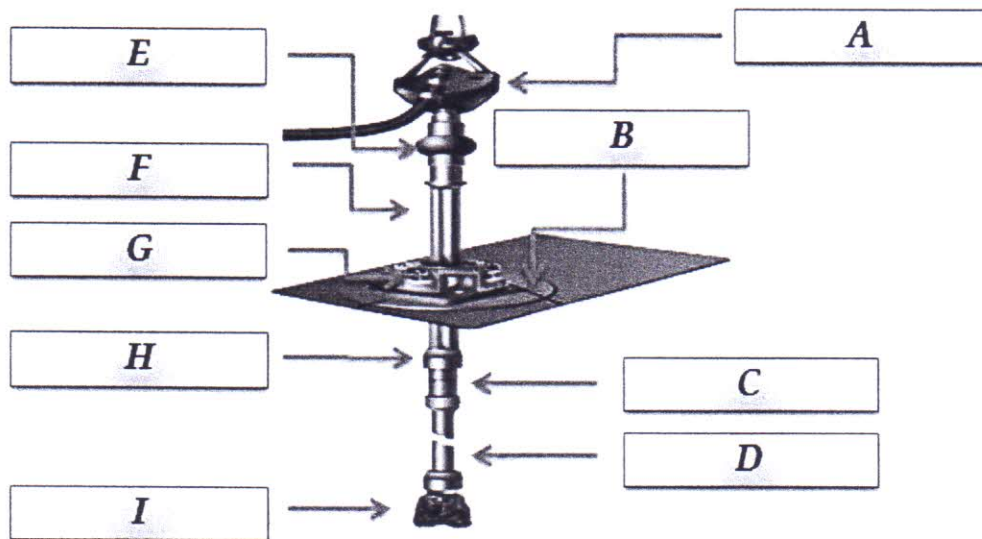
Final Exam
Date: 26/05/2106
Prof. Dr. Ali Elsaeh Enbaia

Answer All Questions:

Full Mark (50 Marks)

Question 1:-

1. The figure below shows a rotating system diagram. (4.5 Marks)

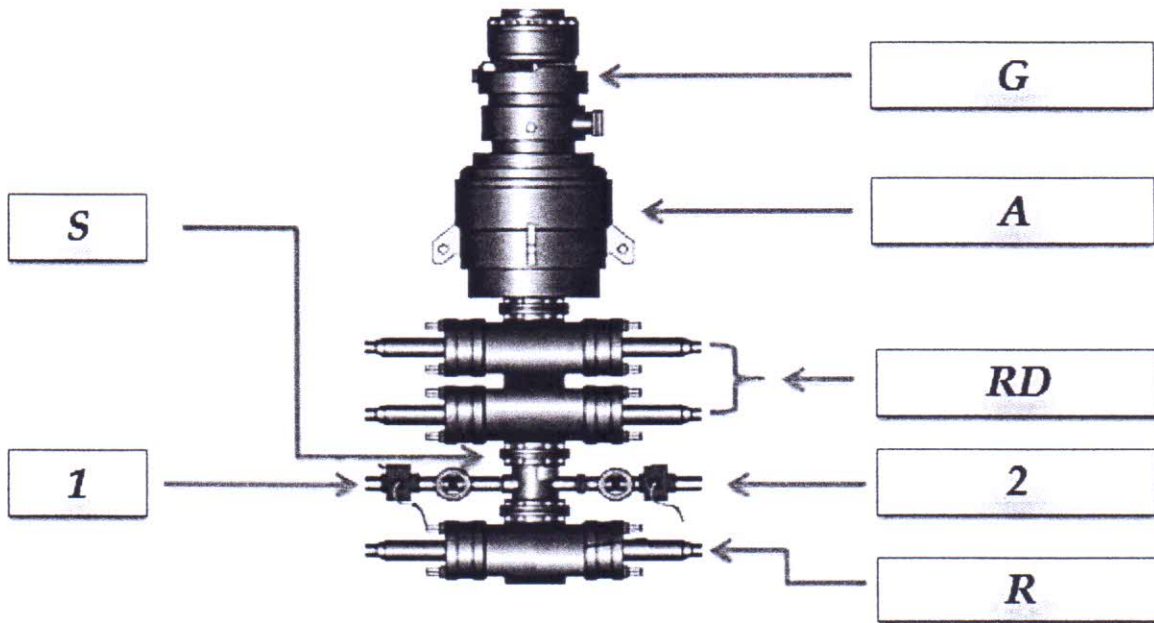


Identify the listed components of the rotating system by matching the correct letter to the appropriate component.

- | | |
|----------------------|---------|
| 1. Upper Kelly Cock. | [-----] |
| 2. Kelly. | [-----] |
| 3. Drill Pipe. | [-----] |
| 4. Drill Collars. | [-----] |
| 5. Drill Bit. | [-----] |
| 6. Swivel. | [-----] |
| 7. Lower Kelly Cock. | [-----] |
| 8. Rotary Table. | [-----] |
| 9. Kelly Bushing. | [-----] |

2. The figure below shows a blowout preventer system diagram.

(3.5 Marks)



In the oil field, codes are used for designation of any Blowout Preventer Stack arrangements called “BOP Stack arrangement Codes”

1. What is each code of the labeled cod in the above figure is stand for?

- G: [.....]
- A: [.....]
- RD: [.....]
- R: [.....]
- S: [.....]
- 1: [.....]
- 2: [.....]

2. What this code (5M – 13 5/8 - RSRDAG) means?

(2 Marks)

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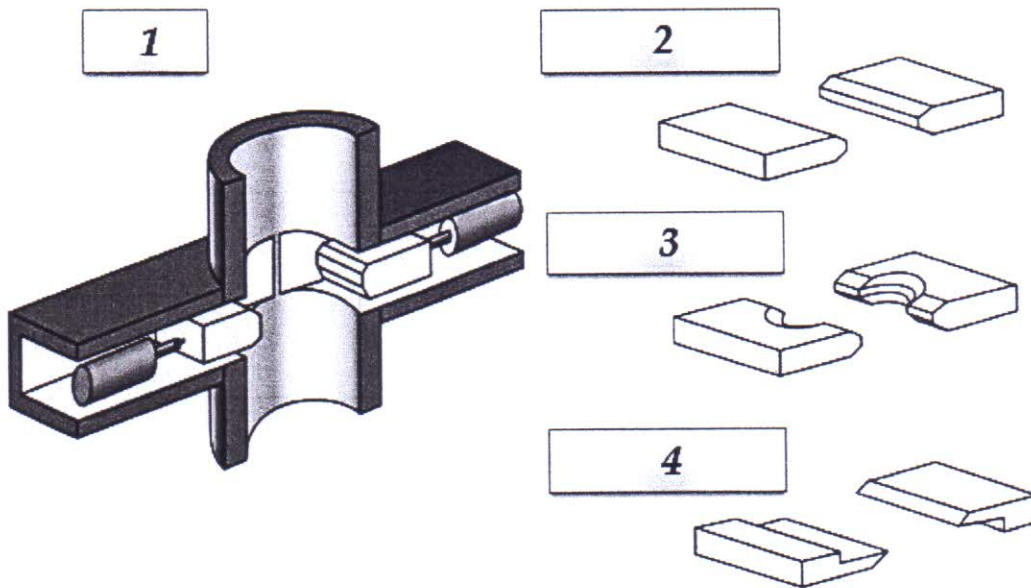
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Question 2:-

1. The figure below shows a RAM type BOP.



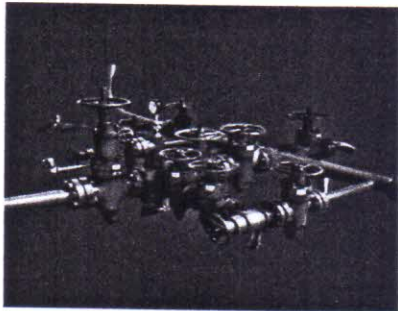
Identify the listed number of the above RAM system by matching the correct number to the appropriate component.

- | | |
|---------------|---------|
| 1. Shear Ram. | (.....) |
| 2. Ram Body. | (.....) |
| 3. Blind Ram. | (.....) |
| 4. Pipe Ram. | (.....) |

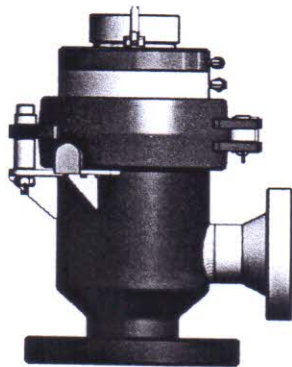
(2 Marks)

3. Write the name of the described component below.

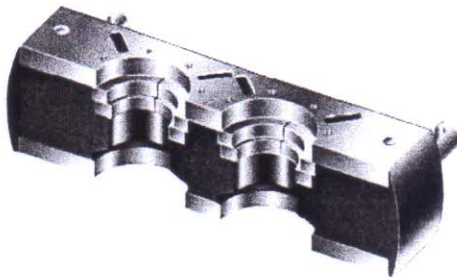
1. "An arrangement of pipes, valves and chokes that allows fluids to be circulated through a number of routes" (1 Mark)



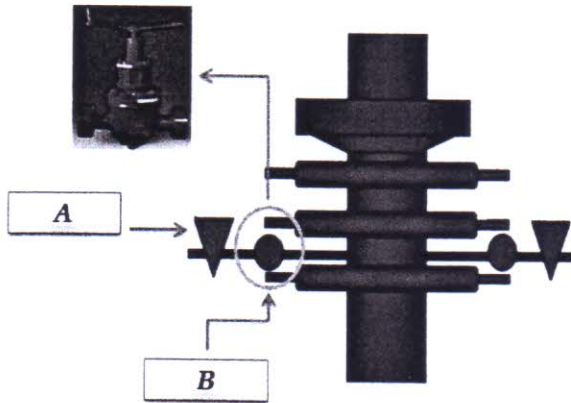
2. A rotating, low pressure sealing device used in drilling operations to seal around the drill stem above the top of blowout preventers stack. (1 Mark)



3. The Dual-bore is designed to seal on three different pipe sizes in two different packer bores. (1 Mark)



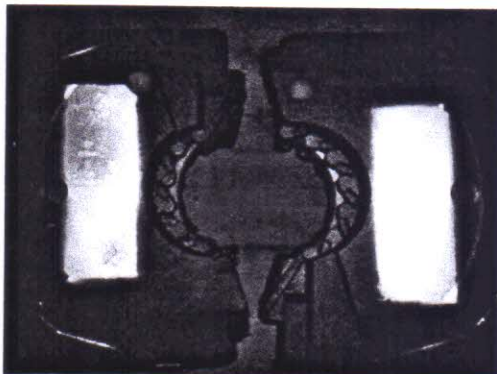
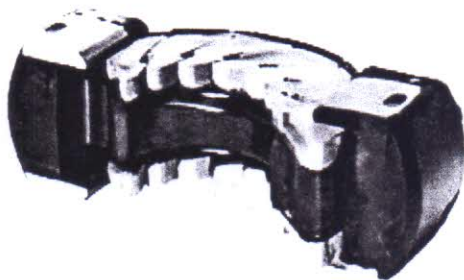
4. Two valves are used on both sides of drilling spool, as labeled in the attached picture (1 Mark)



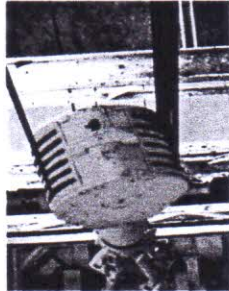
A: _____

B: _____

5. Closing and sealing component in a ram blowout preventer that is capable of sealing on a range of drill pipe sizes. (1 Mark)



9. An arrangement of pulleys through which the drilling line is reeved, thereby allowing the drill string to be raised or lowered. **(1 Mark)**



10. Device is set on the shoulder of casing head (or casing spool) to test the sealing performance of BOP, drilling spool and casing head (or casing spool) through drilling pipe. **(1 Mark)**

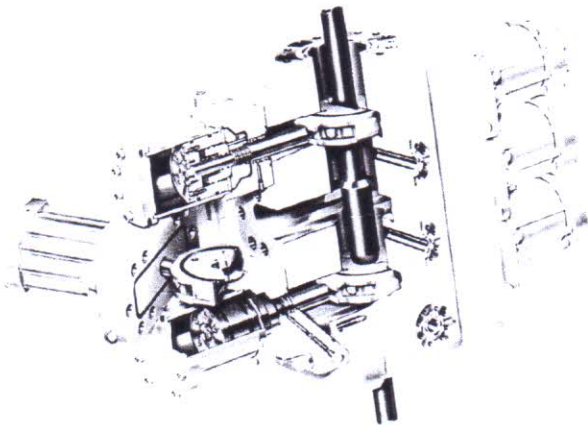
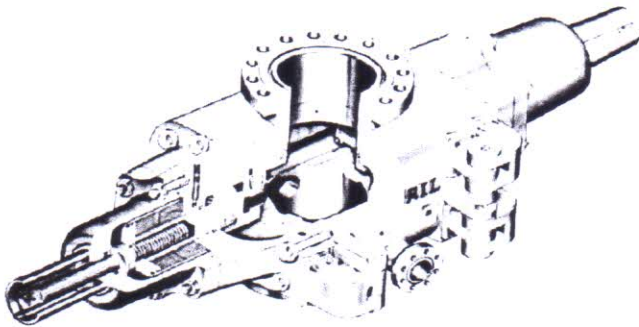
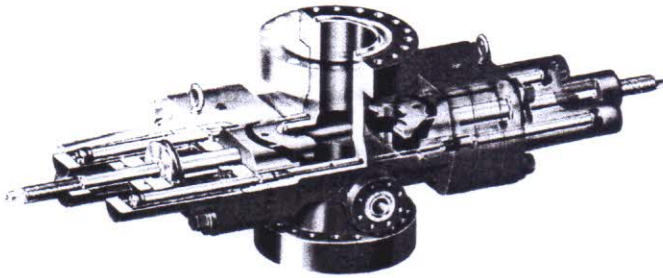


11. The heavy seamless tubing used to rotate the bit and circulate the drilling fluid. Joints of pipe 30 feet long are coupled together with tool joints. **(1 Mark)**



Question 3:-

1. The pictures below show three different types of commonly RAM BOP in use.
Write the name of each one. (3 Marks)



3. Write three benefits (applications) for using this device?

(3 Marks)

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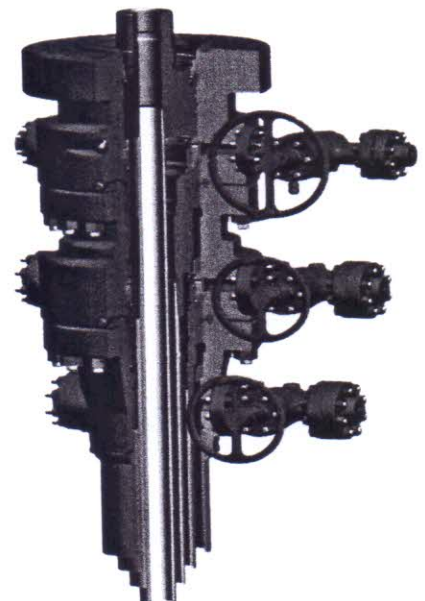
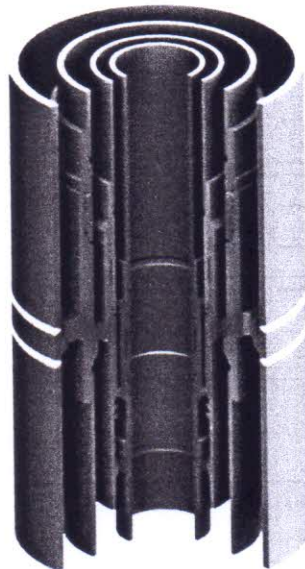
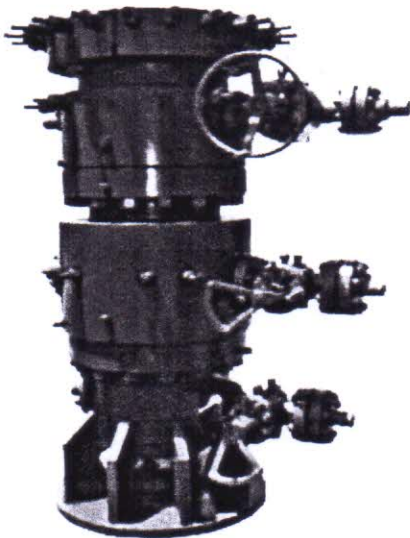
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4. The pictures below show three different types of wellheads are commonly in use. Which is

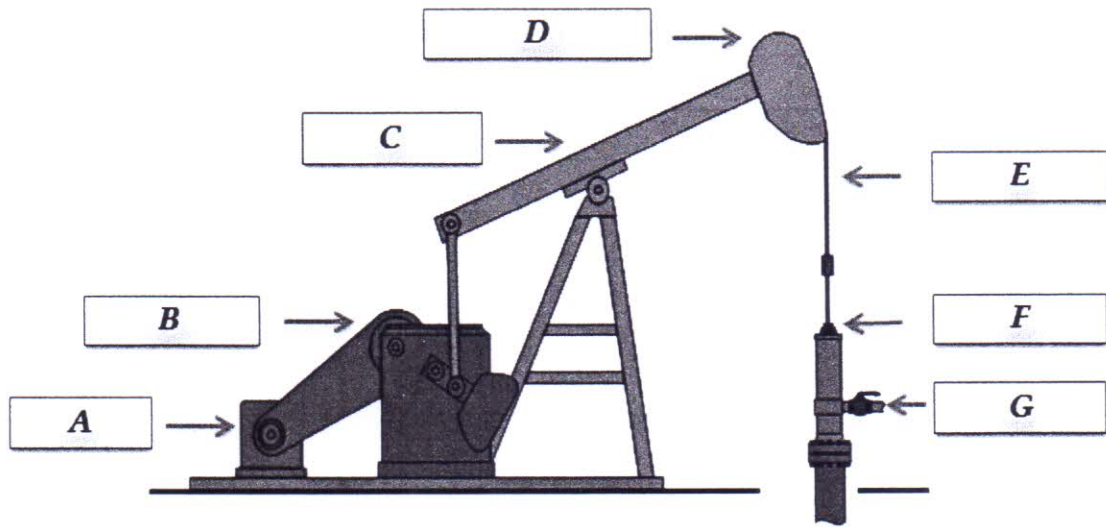
- A. Conventional Wellhead.
- B. Compact wellhead.
- C. Mud line suspension system.

Match the wellhead name to the picture.

(3 Marks)



2. The figure below shows a Beam Pump diagram.



Identify the listed components of the Beam Pump by matching the correct letter to the appropriate component. (3.5 Marks)

- Horsehead. [-----]
- Motor. [-----]
- Beam. [-----]
- Discharge. [-----]
- Stuffing Box. [-----]
- Gearbox. [-----]
- Polished Rod. [-----]

3. List the four methods which are commonly in use to lift the well artificially

(4 Marks)

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