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HYDRAULIC, MECHANICAL, AND ELECTRONIC ENGINEERS

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BASIC HYDRAULICS TRAINING COURSE

PRE/POST TEST

NAME: _____

COMPANY: _____

ATTEMPT ALL QUESTIONS

1. Define **PRESSURE** in terms of a hydraulic system?

2 What develops the **PRESSURE** in a hydraulic system?

3. State three units of **PRESSURE**. a) _____ b) _____

c) _____

4. What is "**ABSOLUTE PRESSURE**"?

5. Is a hydraulic system a *Source of Power*? YES / NO

6. What is the function of *Atmospheric Pressure in a hydraulic system*?

7. In context of a hydraulic system. Complete the following: - "**Increased Volume**" =

8. What is meant by the term "**CAVITATION**"?

9. State Four possible causes of **CAVITATION**?

a) _____ b) _____

c) _____ d) _____

10. State two effects **ENTRAINED AIR** has in a hydraulic system.

a) _____ b) _____

11. What Produces the **FLOW** in a hydraulic system?

12. State Two Unit of **FLOW**? a) _____

b) _____

13. In relation to a given **FLOW RATE** what is the consequence of **HALVING** the pipe **DIAMETER** with respect to the **FLUID VELOCITY**?

14. What is meant by the term "**LAMINAR FLOW**"?

15. What is meant by the term "**TURBULENT FLOW**"?

16. Complete the following: - “*The SQUARE ROOT of the PRESSURE DROP across an ORIFICE is directly proportional to* “

17. What equipment would you use to test the condition of a **PUMP**, in a hydraulic system?

a) _____ b) _____

c) _____

18. What is used to **LIMIT** the **MAXIMUM PRESSURE** in a hydraulic system?

19. What other type of **ENERGY** is produced in a hydraulic system?

20. If a system has 2 or more **PARALLEL FLOW PATHS** with different **RESISTANCE'S** which flow path will the fluid take?

21. Identify components A to O below:

A. _____ I _____

B. _____ J _____

C. _____ K _____

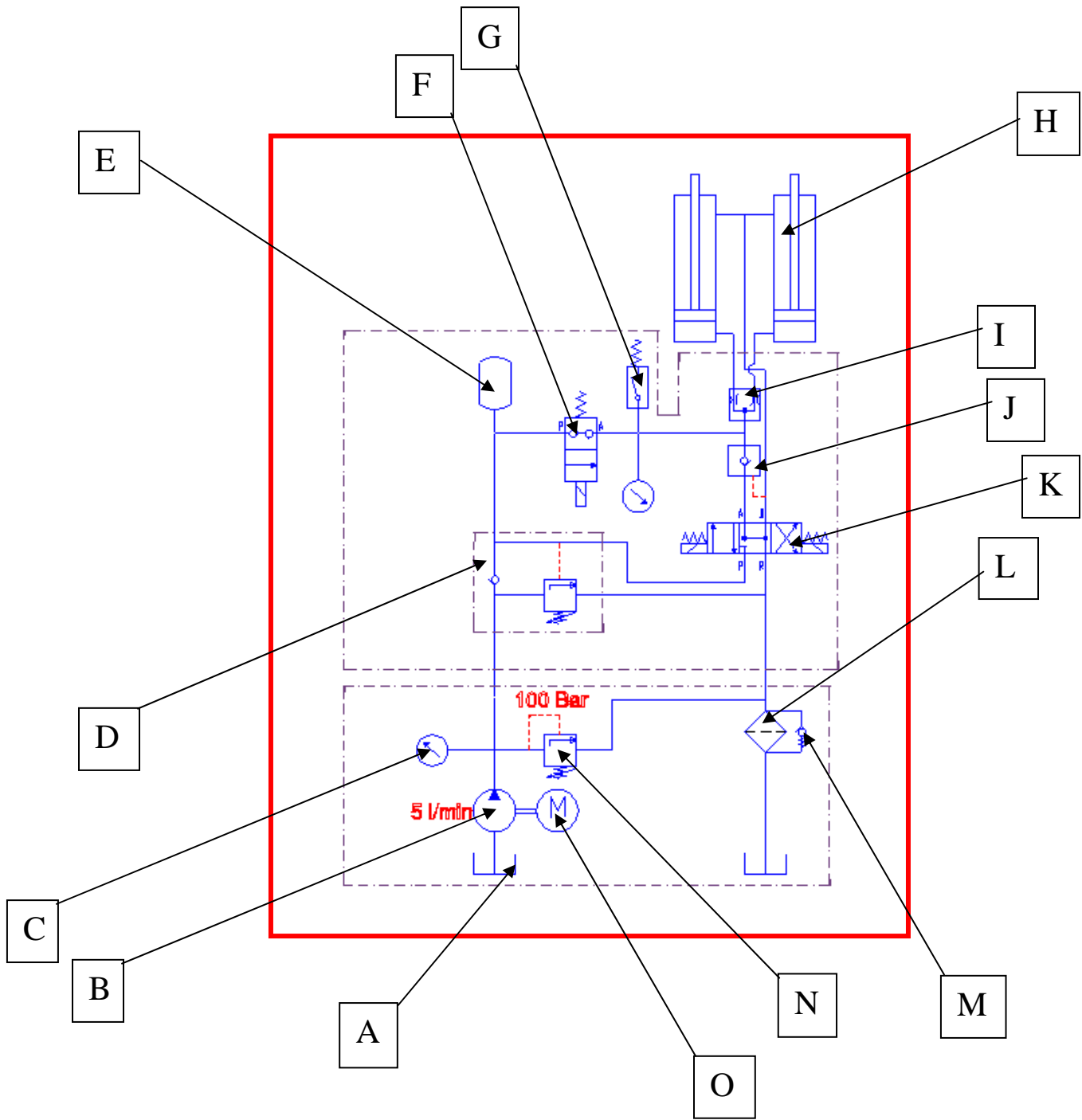
D _____ L _____

E _____ M _____

F _____ N _____

G _____ O _____

H _____



22. With reference to a hydraulic system what is meant by the term **OPEN CIRCUIT**?

23. With reference to a hydraulic system what is meant by the term **CLOSED CIRCUIT**?

24. What 4 functions does the **BOOST PUMP** perform in a **CLOSED CIRCUIT**?

a) _____ b) _____

c) _____ d) _____

25. Complete the following "85% of all failures in hydraulic systems are directly attributed to"

26. Excluding solids name **TWO** other types of contamination?

a) _____ b) _____

27. What is the effect on the oil if the operating temperature of a system exceeds 50°C?

28. State 4 ways in which contamination can be introduced into a hydraulic system?

a) _____ b) _____

c) _____ d) _____

29. In terms of filtration what is meant by the term "**BETA RATIO**"?

30. Name FOUR locations within a hydraulic system where filters can be fitted?

a) _____ b) _____

c) _____ d) _____

31. What is one of the first things that you would check if a hydraulic system failed to operate?

32. How can the condition of a **HYDRAULIC MOTOR** be easily checked?

33. What Four things can be used to identify a fault on a hydraulic system without fitting any other equipment into the circuit?

a) _____ b) _____

c) _____ d) _____

34. Explain the term “**CONTINUOUS MONITORING**” in relation to a hydraulic system?

35. List the procedure that should be adopted when undertaking the “**LOGICAL FAULT DIAGNOSIS**” of a hydraulic system?

a) _____

b) _____

c) _____

d) _____

36. State Three **PRECAUTIONS** that should be taken prior to undertaking the **FLOW & PRESSURE TESTING** of a hydraulic system?

a) _____ b) _____

c) _____

37. If a pump were running very noisily, what would you suspect as the possible cause?

38. How can a **GAS** other than **AIR** enter a hydraulic system?

39. State Four Precautions that should be observed before starting to work on a hydraulic system.

a) _____ b) _____

c) _____ d) _____

40. State Four Precautions that should be observed before re-starting a hydraulic system after carrying out work on it?

a) _____ b) _____

c) _____ d) _____