

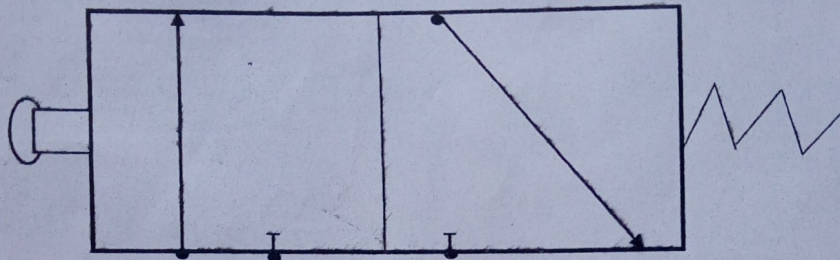
OPARA EZENWA BENJAMIN

FEDERAL UNIVERSITY OF TECHNOLOGY OWERRI
DEPARTMENT OF MECHATRONICS ENGINEERING
HARMMATAN SEMESTER EXAMINATION
COURSE CODE: MCE 311: DATE: 20/04/18: Time allowed: 1:45hrs
INSTRUCTION: ANSWER QUESTION 1 and ANY OTHER 2

QST1.

(b) Compare between Hydraulic and Pneumatic system

- a. How can we specify a valve? (b). Mention at least 4 industries we prefer the use of pneumatic than hydraulic fluid as a medium of actuation, give reason for each choice.



C (i) Draw and label this diagram precisely (ii) Use a line diagram with an arrow indicators practically show the movement of a pneumatic fluid, when activated and when not actuated to operate a double acting cylinder and a single acting cylinder.

D. differentiate between a double acting and a single acting cylinder. Give four examples of it in every day application.

QST2.

- (a) Explain the term fluid power with at least five applications of fluid power.
(b) State various classification of fluid power system and its sub-classification for each group.
(c) Briefly discuss Stationary hydraulics and Mobile hydraulics with at least three examples of each.
(d) Discuss two types of hydraulic system

QST3.

Valves are used for controlling the direction of flow in hydraulics system and is capable of introducing a restriction in a flow. By the aid of a well represent diagram, describe;

- (i) Two-Position Valves.
(ii) Three-Position Valves

QST4.

Neatly sketch basic components of a pneumatic system and explain various functions of each component.