

WEEK: 5&7

CLASS: JSS 3

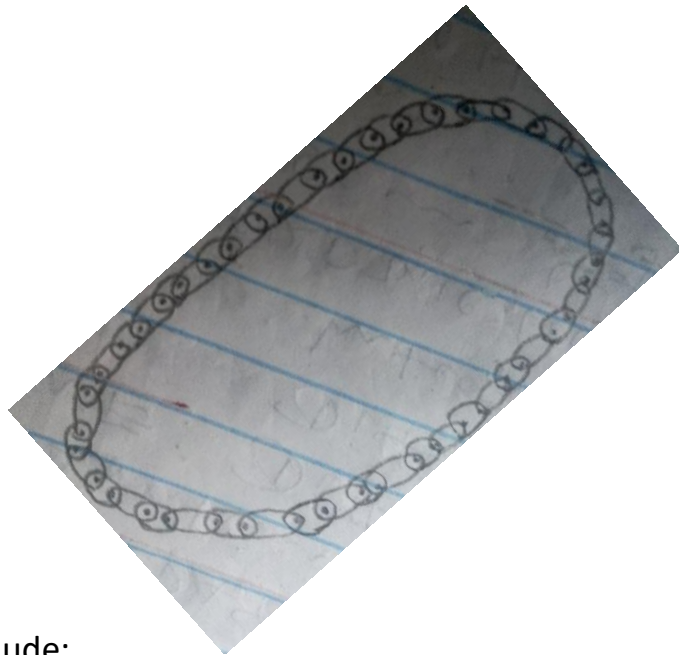
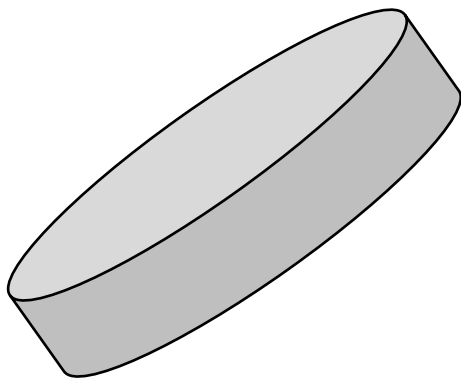
DATE:

TOPIC: BELT AND CHAIN DRIVE

In engineering systems, there is always the need to transfer motion (energy) from where it is produced to where it is needed for work. Again, there are situations where motion generated at a point is split into multiple point or areas for various reasons mainly as may be demanded by such a design, application or anticipated function of such a machine or system.

A belt is a closed, circular flexible material made of rubber, fabrics or leather used in the transmission of motion from one point to another in a mechanical system.

A chain is a group of cascaded pieces of metals that are connected to each other in a flexible form that is used in conjunction with gears to transmit motion in a mechanical system.



APPLICATION OF BELT DRIVE

The application areas of belt drives include;

1. Automobile fan for engine cooling
2. Grinding machines
3. Filing machines
4. Conveyors for load carrying
5. Power generating plants etc.

APPLICATION OF CHAIN DRIVE

The application areas of chain drive include;

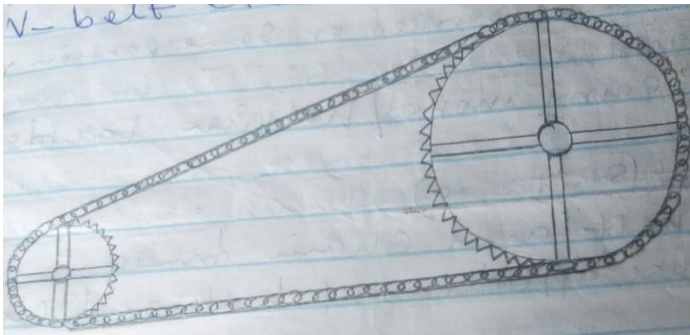
1. Bicycle/ motorcycle systems
2. Timing chain of automobiles
3. Heavy duty earth movers used in road construction and swampy areas

4. Auto-stair case (escalator) for comfort climbing of modern buildings
5. Conveyor chains for load carrying etc.

TYPES OF BELTS

The types of belt include;

1. Flat belt
2. Round belt
3. V-belt



A Chain in operation



A Belt in operation

ADVANTAGES OF BELT OVER CHAIN

1. Belts are less expensive
2. Belts are easier to maintain since they do not require lubrication
3. Belts are easier to replace when damaged
4. Belts do not rust over time
5. Belts are less dangerous to users.

ADVANTAGES OF CHAIN OVER BELT

1. Chains are stronger since they are made of metals
2. Chains can easily be adjusted when they sag
3. Chains can withstand higher temperature
4. Chains can be serviced or some portions removed and replaced
5. Chains carry more or heavier loads.