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SAO 1

### 1. COMPARE FLYWHEEL TO GOVERNOR

A flywheel is a big circular mass to store energy when in the form of rotational kinetic energy slowly added to it by intermittent torque, generally in internal combustion engine, while a governor is basically a fuel input or energy input controller for an engine.

A flywheel runs as long as the engine is running while a governor runs when the engine runs at its maximum speed.

A flywheel is a mechanical device specifically designed to store rotational energy while a governor is essentially a speed controller device used to measure and regulate the speed of the machine irrespective of the load variations.

### 2. WHICH TYPE OF CONTROL DO GOVERNOR SYSTEMS USE

They use Mechanical feedback control system

### 3. COMPARE CENTRIFUGAL GOVERNORS WITH INERTIA GOVERNORS

The operation of a centrifugal governor depends on the change in speed and centrifugal force on the governor balls. In addition to centrifugal force, the position of governor ball and the

the operation of governor controlled by force of angular acceleration and retardation of the spindle

The centrifugal governors only centrifugal force is in controlling action while in inertia governor, both centrifugal force and inertia force are in action.

In a centrifugal governor the sensitiveness is less when compared to an inertia governor which is highly sensitive to varying load.

In centrifugal governors the response is slower than that of an inertia governor while the reaction of an inertia governor is faster than that of the centrifugal governor (quick response)

The centrifugal governors, it is easy to balance the revolving parts while in an inertia governor it is hard to balance revolving parts.

The centrifugal governor is more frequently used while inertia governors are not popular.

SAQ 2

### WHY IS THE WATT GOVERNOR RARELY USED

The Watt governor is rarely used because it is limited to only vertical position applications and its sensitivity decreases with speed increase.

SAQ

### IN WHICH RESPECT IS THE PORTER GOVERNOR BETTER THAN THE WATT GOVERNOR

The Porter governor has higher sensitivity at higher speeds than the Watt governor and the Porter governor can carry dead weight compared to the Watt governor

SAQ 4

FOR IC ENGINES, WHAT TYPE OF GOVERNOR WILL YOU PREFER: DEAD WEIGHT TYPE OR SPRING CONTROLLED TYPE? GIVE REASONS

A dead weight gravity controlled governor is preferred in IC engines as the basic principles of engine operation is centrifugation