NAME: ONUOHA STEVE IKENNA

MATRIC NO: 17/ENG06/068

DEPARTMENT: MECHANICAL

MECHANICS OF MACHINES

1]

IT IS GENERALLY CONSIDERED THAT IN ENGINEERING APPLICATION PROBLEM, THERE ARE NO

PERFECTLY FRICTIONLESS SURFACES. EXPLAIN THESE TWO TYPES OF FRICTION, DRY FRICTION AND

FLUID FRICTION AND GIVE PRACTICAL EXAMPLES.

DRY FRICTION: This is the force that opposes one solid surface sliding across another solid surface.

Dry friction always opposes the surfaces sliding relative to one another and can have the effect of

either opposing motion or causing motion in bodies. The two regimes of dry friction are static

friction between non-moving surfaces, and kinetic friction between moving surfaces.

A practical example of dry friction is antifriction bearings which have it operate without liquid

lubricant will experience high wear and friction

FLUID FRICTION: This is the force that resists motion either within the fluid itself or of another

medium moving through the fluid. There is internal friction, which is a result of the interactions

between molecules of the fluid and there is external friction which refers to how a fluid interacts

with another mater.

A practical example of fluid friction is a fluid few e.g. in a tube, not as solid plugs, but with more or

less complicated internal motion with continuously changing velocities at all points of reference in

the fluid.

2}

EXPLAIN THE FOLLOWING TUPES OF MACHINES: WEDGES, SQUARE-THREADED SCREWS AND

JORNAL BEARINGS.

WEDGES: This is simply a triangular tool, often made of metal, wood, stone or plastic. It is thick on

one end and tapers to a thin or sharp edge on the other end. Technically, it is an inclined plane (or

two inclined planes put together to form a triangle) that moves. A wedge may be attached to a

handle to make it easier to use. Examples are nails, knives and axes.

SQUARE-THREADED SCREWS: The square thread form is a common screw thread form, used in high

load applications such as lead screws and jackscrews. It gets its name from the square cross-section

of the thread. It is the lowest friction and most efficient thread form, but it is difficult to fabricate.

JOURNAL BEARINGS: Journal or plain bearings consist of a shaft or journal which rotates freely in a

supporting metal sleeve or shell. There are no rolling elements in these bearings. Their design and

construction may be relatively simple, but the theory and operation of these bearings can be

complex.