

# **Lukhdhirji Engineering College, Morbi**

## **Department of Mechanical Engineering**

### **Assignment 5- Introduction to Machine Design: (CO1)**

**Subject: Fundamental of Machine Design (3141907) Semester: 4<sup>th</sup>**

**Year : 2022-23**

1. What is standardization? State the benefits of it.
2. What are preferred numbers? Find out the numbers of R10/3 (100... 1000) derived series.
3. Specify the diameters to standardize eleven shafts from 100 to 1000 mm.
4. A manufacturer is interested in starting a business with five different models of tractors ranging from 7.5 to 75 kW capacities. Specify power capacities of the models. There is an expansion plan to further increase the number of models from five to nine to fulfill the requirement of farmers. Specify the power capacities of the additional models.
5. What are the principles of design for manufacture and assemblies (DFMA)?
6. Explain the design consideration of castings process with sketches.
7. Explain the design consideration of forging process with sketches.
8. Write short note on aesthetic considerations in design.
9. Explain ergonomics considerations in design.
10. Write the effects of major alloying elements of steels.
11. Write a short note on selection of proper material for the machine components.