109054 · Krishnaraj PT

# Assignment – 1.

## Introduction to Mechanical Engineering

Q.1. What are the broad subdivisions of Mechanical Engineering? Explain any one.

→ The 3 broad subdivisions of mechanical engineering are:

1. Thermal Engineering
2. Design Engineering
3. Manufacturing engineering.

→ Mechanical or Production Engineering:

It is the design, development, implementation, operation, maintenance and control of all processes in the manufacturing of a product.

It consists of the activities involved in the creation and operation of technical and economic processes that convert raw materials, energy and purchased items into:

(a) Components for sale to other manufacturers
(b) End products for sale to the public

Q.2. What are the various branches of Thermal Engineering?

→ (1) Heat Transfer → Passage of Heat energy from one body to another.

(2) Energy conversion :

→ Transformation of energy from sources such as fossil, nuclear etc into something useful like electricity.

(3) Fluid Mechanics :

The study of fluids - liquids and gases.

Q.3. List any 2 inventions where Computer Science Engineering and mechanical engineering have contributed together.

→ (1) 3D - Printers :
You need mechanical engineers to plan the shafts, motors, gearboxes and rotation mechanisms in all directions of the nozzle.

You need computer programming to tell the nozzle where to print.

(2) Self Driving Cars :
Mechanical engineers will make the car itself, its engine, gearbox, etc, while you need sophisticated algorithms to detect the presence of road and people to enable the car to move with sensors.

(3) - CNC Machines, Robotic arms, Ball tracking Cameras in Cricket matches, etc.

Rainbow

(4). What are the role and responsibilities of of mechanical engineers in industry?

ans. (1) Mechanical engineers design, develop, build and test mechanical and thermal sensors and devices.

(2) They provide efficient solutions to development of products and process.

(3) All industries rely on Mechanical engineering so they have the most responsibility.

(4) They conceptualize the design for any product.

(5) They have to solve small scale as well as large scale problems ranging from designing a nozzle to an airplane.

Q.5. What are the different associations of Mechanical engineering? Explain any one.

→. Some associations of Mechanical engineering are:

(1) Indian Society of Mechanical Engineers (ISME)
(2) Society of Automotive Engineers International (SAE)
(3) American Society of Mechanical Engineers (ASME)
(4) The Institute of Mechanical engineers. (IMechE).

→ Indian Society of Mechanical Engineers (ISME)

(1) It is a non-profit technical society in India updating vital information in field of engineering and technology.

(2) Established in Madras in 1990.

(3) Seeks to bring together various individuals, institutions and govt agencies.

(4) Aims to evolve and develop engineering pratices in India.