

	<p><b>Tulsiramji Gaikwad-Patil College of Engineering and Technology</b>  Wardha Road, Nagpur-441108  NAAC Accredited (A+Grade) &amp; NBA Accredited  <b>An Autonomous Institute affiliated to RTMNU Nagpur</b></p>	
<p><b>Third Year (Semester-VI) B.Tech. Electrical Engineering</b></p>		
<p><b>BEE3611:-Geothermal Energy Utilization</b></p>		

### Unit 1

#### Short Answer Questions

1. Name a few sites where geothermal energy is harnessed.
2. Enlist the geothermal sites in India.
3. What are different types of renewable energy sources available for production of Electrical Energy?
4. What are benefits of Geothermal energy?

#### Long Answer Questions

1. What do you understand by geothermal energy? What are geothermal fields?
2. Discuss briefly geothermal energy.
3. What are hot spots? Why hot spots are important in harnessing Geo-thermal energy?
4. Name a few sites where geothermal energy is harnessed.
5. What is geothermal energy? How can geothermal energy be utilized for electric power Generation?
6. Explain the new trends in renewable energy technologies.
7. What is the current status of geothermal energy in India?

### Unit -2

#### Short Answer Questions

1. Classify the geothermal sources.
2. Name the layer of Earth's Internal structure.
3. Why harnessing geothermal energy is important?
4. Discuss disadvantages of geothermal energy.

#### Long Answer Questions

1. Classify the geothermal sources.
2. What is the difference between fissures and fumaroles in geothermal energy? (2)
3. Explain the Structure of Earth's interior.
4. What are the possible sources of geothermal pollution? How to avoid them?
5. Write the sequence of energy transformation taking place in the Geothermal power plant
6. How is electricity generated from Geo-thermal energy?
7. What are the limitations of harnessing Geo-thermal energy? What are the advantages and disadvantages of Geo-thermal energy?
8. Discuss the advantages of geothermal plants.
9. Discuss the disadvantages of geothermal plants.
10. Illustrate Petro-thermal system with a diagram.
11. Illustrate Hydro thermal Resources Geo-thermal energy
12. Illustrate Geopressured Resources Geo-thermal energy
13. Explain Magma Resources of Geo-thermal energy

### **Unit -3**

#### **Short Answer Questions**

1. Classify Geothermal reservoirs Stating Temperature levels.
2. Explain Advantages of Hyperthermal region.
3. How geothermal energy can be harnessed from Semi thermal region.

#### **Long Answer Questions**

1. Discuss vapor-dominated geothermal plants with a diagram.
2. With a line diagram, explain the heat extraction from hot dry rocks
3. Briefly describe different analytical methods to estimate geothermal potential.
4. Illustrate with Neat Sketch Hot Dry Rock Systems.
5. Illustrate with Neat Sketch Geo pressured Reservoirs
6. Illustrate with Neat Sketch Magma Energy as a source of geothermal energy.
7. Explain Hot Dry Rock Fracturing Technique.
8. Discuss the Estimation of Potential from Dry Rocks, and Estimation of potential from hot aquifers.
9. Discuss categories of Categories of Geothermal sites.

### **Unit 4**

#### **Short Answer Questions**

1. List different types of Geothermal Power Plants.
2. Distinguish between Flashing Units and Dual Flashing Units.
3. What is Hybrid Geothermal-Fossil Power Units.
4. What are Environmental Benefit of Geothermal Power Plants.

#### **Long Answer Questions**

1. Explain the various Geothermal resources available.
2. Illustrate with Neat Sketch Hybrid Geothermal-Fossil Power Units
3. Discuss the effects of Impurities in the Geo thermal Fluid.
4. Explain Geothermal District Heating: An Example of Energy Savings.
5. Discuss the Environmental Benefit and environmental Effects of Geothermal power plant.

### **Unit 5**

#### **Short Answer Questions**

1. Explain the use of Geothermal systems for electricity generation.
2. Distinguish between Single-flash power plant and Double-flash power plant.
3. Distinguish between Dry steam power plant and Binary cycle (ORC) power plant

#### **Long Answer Questions**

1. Explain with neat sketches, the operation of a geothermal power plant.
2. Discuss the classification of geothermal power plants.
3. Explain the use of Geothermal systems for electricity generation.
4. Illustrate with Neat Sketch Dry steam power plant.
5. Illustrate with Neat Sketch Binary cycle(ORC) power plant.
6. Illustrate with Neat Sketch Single-flash power plant.
7. Illustrate with Neat Sketch Double-flash power plant.