



Regulation R18

Subject code: 205BD

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech V Semester Regular Examinations, February 2021

NON CONVENTIONAL POWER GENERATION

(Electrical and Electronics Engineering)

Maximum Marks: 70

Date: 26.02.2021 Duration: 3 hours

- Note:**
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Total 10 questions it consists.
 4. Part-B each question carries 12 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 Define 'Surface azimuth angle'
- 2 What is meant by solar spectrum?
- 3 What is flat plate collector?
- 4 What is the biogas?
- 5 Write down the applications of tidal power.
- 6 Define gasifiers
- 7 What is the biomass?
- 8 Define the solar cell.
- 9 What is OTEC open cycle.
- 10 What are the applications of fuel cells?

Part-B

Answer All the following questions.

(5X10M=50Marks)

- 11 a) Draw the I-V characteristics of PV cell and describe the system configuration for maximum power extraction from PV system. (5M)
b) Describe the principle of solar photovoltaic conversion. (5M)
OR
- 12 a) Explain the total solar radiation in solar system. (5M)
b) Explain the solar constant and write the related equation? (5M)
- 13 What is a flat plate collector? Explain its operation in detail with neat diagrams. (10M)
OR
- 14 Derive the wind turbine power equation. (10M)
- 15 a) Classify tidal power turbines and explain them. (5M)
b) Write the advantages and disadvantage of tidal power systems. (5M)
OR
- 16 What are the instruments are used for measurement of solar energy with neat diagrams. (10M)

17 What is the Principle of operation of OTEC Systems and explain Open and closed cycles systems. (10M)

OR

18 What are the classifications of geo thermal sources? (10M)

19 Explain the components of tidal power plants. (10M)

OR

20 Explain about various fuel cells and its applications. (10M)