

R.N.G.PATEL INSTITUTE OF TECHNOLOGY-RNGPIT
(An Autonomous Institute U/s UGC Act 1956)

B.Voc. SEMESTER-I, SEMESTER END EXAMINATION – WINTER 2025

SUBJECT CODE: 1SRE104

DATE: 22-12-2025

**SUBJECT NAME: INTRODUCTION TO RENEWABLE ENERGY
SOURCES**

TIME: 11:00 AM to 01:00 PM

TOTAL MARKS: 50

Instructions

1. It is **compulsory** for students to write **Enrolment No. /Seat No.** on the question paper.
2. Attempt all questions in the question paper.
3. The figures to the right of each question indicate full marks. Make suitable assumptions with proper justification wherever required.
4. Simple, non-programmable scientific calculators are permitted.
5. BL - Cognitive Level (As per Revised Bloom's Taxonomy) (R-Remember, U-Understanding, A –Application, N –Analyze, E – Evaluate, C -Create), CO - Course Outcomes.

		Marks	BL	CO
Q.1	(a) What is renewable energy and types of renewable energy?	05	R	1
	(b) Differentiate between renewable energy and non-renewable energy.	05	R	1
Q.2	(a) Describe construction and working of Pyranometer.	05	U	2
	(b) Define following terms: (i) Efficiency of wind mill (ii) Swept area (iii) Cut in speed (iv) Cut out speed (v) Wind velocity	05	R	2
OR				
Q.2	(a) Comparison of Horizontal axis wind mill and Vertical axis wind mill.	05	U	2
	(b) Draw the block diagram and explain the key components of a geothermal power plant and their functions.	05	R	2
Q.3	(a) Describe construction and working of Pyrehelimeter.	05	U	2
	(b) Draw and explain the Inside parts of wind turbine.	05	U	2
OR				
Q.3	(a) Give Classification of Wind mills.	05	U	2
	(b) Draw the block diagram and explain the key components of a biomass power plant and their functions.	05	U	2

- Q.4 (a)** Explain the functions of the following: (i) Dam (ii) spillways (iii) surge tank (iv) draft tube (v) Penstock **05 U 3**
- (b)** Explain the essential factors which influence the choice of site for a hydro- electric plant. **05 A 3**

OR

- Q.4 (a)** Give classification of hydroelectric power station. **05 U 3**
- (b)** Draw and explain neat schematic arrangement of Hydro power station and discuss function of its constituents. **05 A 3**

- Q.5 (a)** Write a short note on emerging trend in tidal energy. **05 U 4**
- (b)** Explain the emerging trend in solar thermal energy. **05 A 4**

OR

- Q.5 (a)** What are the challenges in renewable energy? **05 U 4**
- (b)** Briefly describe the emerging trend in geothermal energy. **05 A 4**
