MAR ATHANASIUS COLLEGE OF ENGINEERING, KOTHAMANGALAM

(GOVERNMENT AIDED AUTONOMOUS ENGINEERING COLLEGE)

DEPARTMENT OF CIVIL ENGINEERING

FIRST SESSIONAL EXAMINATION, SEPTEMBER 2026

FIFTH SEMESTER(MINOR)

RENEWABLE ENERGY(B24CEM52)

Time – 1 Hour 30 Minutes **Max: 40 Marks**

Part A (4X3=12 marks)

1. Enumerate the basic principle of conversion of solar radiation into heat. Name two types of solar collectors.
2. Differentiate between flat-plate collectors and concentrating collectors in one or two points each.
3. Mention any three site-selection criteria for an OTEC plant.
4. List any three ocean energy resources and briefly state their potential.

Part B

5. (a) Discuss the role of renewable energy in civil infrastructure with special reference to solar energy applications. (6 Marks)

   (b) Explain the working of a solar photovoltaic system. Discuss its typical civil-engineering applications such as building-integrated PV, street lighting and water pumping. (8 Marks)

6 (a) Explain the socio-economic impacts of large-scale tidal power projects. (6 Marks)

   (b) With a neat sketch, describe the main components of a tidal power plant and state the function of each. (8 Marks)

VISION

To develop a department proficient in all aspects of civil engineering blending theory and practice

MISSION

1. To impart the right combination of civil engineering fundamentals and use of modern tools to the students
2. To encourage learning with due emphasis given to professional ethics and traditional norms.
3. To enhance the knowledge base of students in liaison with practice and research
4. To encourage life-long learning

Question No.	1	2	3	4	5(a)	5(b)	6(a)	6(b)	**Total Marks**
CO Mapping	1	1	2	2	1	1	2	2	
Bloom Taxonomy Level	II	I	III	I	III	I	II	III	
Max. Marks	3	3	3	3	6	8	6	8	40

	Prepared by	**Scrutinized by**	**Approved by**
Name	Prof . Roniya Joseph	Dr. Sachin Paul	Dr. Elson John
Signature			