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Code No. : 14118 N(C)

VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
B.E. (CBCS) IV-Semester Main Examinations, May-2019

Non-Conventional Energy Sources
 (Open Elective-II)

Time: 2 hours

Max. Marks: 40

Note: Answer ALL questions in Part-A and any FIVE from Part-B

Q.No.	Stem of the question	M	L	CO	PO
Part-A (5×2 = 10 Marks)					
1.	Compare conventional and non-conventional energy sources.	2	4	1	1,3,4,6,8,11
2.	Define the terms i) Solar constant ii) Solar insolation.	2	1	2	1
3.	Give any two applications of wind energy.	2	3	3	1,4,8,11
4.	List the methods of harnessing ocean energy.	2	4	4	1,4,6
5.	Name the geothermal resources.	2	1	5	1
Part-B (5×6 = 30 Marks)					
6. a)	Describe the construction and working of Ion-Exchange membrane fuel cell with chemical reactions.	4	2	1	1,4,8
b)	Give any two the advantages and disadvantages of fuel cells.	2	2	1	1,4,8,11
7. a)	Name the instruments used for measuring solar radiation.	2	1	2	1,3,4
b)	Illustrate the construction and operation of central tower receiver.	4	3	2	1,4,8
8. a)	With a neat schematic, explain the working of non-convective solar pond.	4	2	2	1,4,8
b)	Define the terms: i) Pyrolysis ii) Incineration.	2	1	1	1
9. a)	Describe the construction and working of horizontal axis wind electric plant with neat diagram.	4	2	3	1,4,8
b)	Compare S-type and D-type wind rotors.	2	4	3	1,4,8,11
10. a)	With neat layout and T-S diagrams, explain the operation of open cycle Ocean Thermal Energy Conversion.	3	2	4	1,4,8
b)	Explain the operation of single basin arrangement of tidal power plant.	3	2	4	1,4,8
11. a)	With neat layout and T-S diagram, explain the liquid dominated geothermal power plant.	4	2	5	1,4,8
b)	Give any four applications of geothermal energy.	2	3	5	1,3
12. a)	List the performance indices of solar collectors. Compare non-concentrating type and concentrating type solar collectors.	5	4	1	1,4,8
b)	What are the drawbacks of tidal power generation?	1	1	4	1,4,8,11

M: Marks; L: Bloom's Taxonomy Level; CO: Course Outcome; PO: Programme Outcome

S. No.	Criteria for questions	Percentage
1	Fundamental knowledge (Level-1 & 2)	69.24
2	Knowledge on application and analysis (Level-3 & 4)	30.76
3	*Critical thinking and ability to design (Level-5 & 6) (*wherever applicable)	0.00

