

University of Mumbai
Examination 2020 under cluster 4 (PCE)

Program: BE Mechanical Engineering

Curriculum Scheme: Rev2012

Examination: Final Year Semester VIII

Course Code: MEE8022 and Course Name: Renewable Energy Sources

Time: 1 hour

Max. Marks: 50

Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	The major non-renewable energy usage in India is ____
Option A:	Coal
Option B:	Petroleum and other liquids
Option C:	Natural gas
Option D:	Nuclear
Q2.	Which among the following is not a renewable source of energy?
Option A:	Biomass energy
Option B:	solar energy
Option C:	Hydro-power
Option D:	Geothermal energy
Q3.	Following country met more than 40% of its electricity demand from wind energy
Option A:	Denmark
Option B:	Portugal
Option C:	Ireland
Option D:	Spain
Q4.	Where does India stand on solar energy production?
Option A:	First
Option B:	Third
Option C:	Fifth
Option D:	Seventh
Q5.	The world's first 100% solar powered airport located at ____
Option A:	Cochin, Kerala
Option B:	Bengaluru, Karnataka
Option C:	Chennai, Tamil Nadu
Option D:	Mumbai, Maharashtra
Q6.	How much day length in hour if declination angle is 23.24° at latitude 28.6°
Option A:	25.9 hours
Option B:	13.8 hours
Option C:	5.36 hours
Option D:	12 hours
Q7.	What is hour angle at 8:30AM for location 35°N on march 38

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Option A:	35°
Option B:	15°
Option C:	50.52°
Option D:	52.50°
Q8.	Value of Betz coefficient is
Option A:	53.9
Option B:	0.593
Option C:	93.5
Option D:	39.5
Q9.	Which type of axis does a Savonius Rotor has?
Option A:	Horizontal axis
Option B:	Mediolateral axis
Option C:	Vertical axis
Option D:	Lateral Axis
Q10.	A modern, propeller type wind turbines has
Option A:	one blade only
Option B:	atleast six blades
Option C:	12 blades
Option D:	two or three blades
Q11.	The mechanism to adjust nacelle around vertical axis to keep it facing the wind is called as
Option A:	adjustable mechanism
Option B:	tethering mechanism
Option C:	yaw control mechanism
Option D:	Pitch control mechanism
Q12.	the angle between central line of blade element and direction of linear motion of blade element is called as
Option A:	angle of attack
Option B:	blade setting angle
Option C:	relative angle
Option D:	yaw control
Q13.	Maximum axial thrust occurs when interference factor 'a' is
Option A:	0
Option B:	0.33
Option C:	0.5
Option D:	1
Q14.	KVIC plant is a

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Option A:	Indian floating dome digester
Option B:	Chinese fixed dome digester
Option C:	Modern fixed dome digester
Option D:	Syntex plant
Q15.	Leakage and requirement of skilled masons is a drawback of
Option A:	Indian design biogas digester
Option B:	Syntex digester
Option C:	modern floating dome digesrs
Option D:	Chinese design biogas digester
Q16.	In pyrolysis combustible mixture of gases predominate
Option A:	At 1000 deg C
Option B:	At 500 deg C
Option C:	when fermentation is going on
Option D:	At 100 deg C
Q17.	If digester fluid volume is 0.5 cubic meter/day and retention period is 15 days the digester volume is
Option A:	8 cubic meter
Option B:	7.5 cubic meter
Option C:	4 cubic meter
Option D:	7cubic meter
Q18.	The kinetic energy that results from the oscillation of water is called
Option A:	wave energy
Option B:	tidal energy
Option C:	ocean thermal energy
Option D:	hydro energy
Q19.	For exactly how much time does it take for one tidal cycle?
Option A:	22h, 20min
Option B:	24h, 50min
Option C:	20h, 10min
Option D:	22h, 50min
Q20.	How much is the efficiency of geothermal plant?
Option A:	28%
Option B:	15%
Option C:	42%
Option D:	30%
Q21.	What does OTEC stand for?
Option A:	Ocean thermal energy cultivation

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Option B:	Ocean thermal energy conversion
Option C:	Ocean techno energy conservation
Option D:	Ocean thermal energy consumption
Q22.	What is hot molten rock called?
Option A:	Lava
Option B:	Magma
Option C:	Igneous rocks
Option D:	Volcano
Q23.	India has about MW of geothermal power potential
Option A:	5000 mw
Option B:	25000 mw
Option C:	10000 mw
Option D:	15000 mw
Q24.	Find out the 'odd' among the following choices for fuel substitution for industrial sector of India.
Option A:	LDO with LSHS
Option B:	coal with rice husk
Option C:	natural gas for fertilizer plant
Option D:	LPG for soft coke
Q25.	Air velocity in ducts can be measured by using ___ and manometer
Option A:	Orifice meter
Option B:	Borden gauge
Option C:	Pitot tube
Option D:	Anemometer

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	C
Q3.	A
Q4	D
Q5	A
Q6	B
Q7	D
Q8.	B
Q9.	C
Q10.	D
Q11.	C
Q12.	B
Q13.	C
Q14.	A
Q15.	D
Q16.	A
Q17.	B
Q18.	A
Q19.	B
Q20.	B
Q21.	B
Q22.	B
Q23.	C
Q24.	D

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Q25.	C
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