Program: BE Electrical Engineering

Curriculum Scheme: Revised 2012

Examination: Fourth Year Semester VII

Course Code: EEE 706 and Course Name: Renewable Energy and Energy Storage Systems

Time: 1 hour Max. Marks: 50

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

Q1.	A 100 Ah battery capacity would deliver a current of 25A under ideal conditions for approximately
Option A:	4 hours
Option B:	2 hours
Option C:	25 hours
Option D:	100 hours
Q2.	Five number of battery cells are connected in parallel and the rating of each cell is 1.5V and 16Ah. What is the Ah rating of this battery?
Option A:	16
Option B:	50
Option C:	80
Option D:	64
Q3.	Angle between the relative airflow to the chord of the airfoil
Option A:	Pitch Angle
Option B:	Rotor angle
Option C:	Yaw Angle
Option D:	Angle of attack
Q4.	---------- Control orients the rotor blades in the direction of wind
Option A:	Pitch
Option B:	Yaw
Option C:	Rotor
Option D:	Gear
Q5.	A 100Ah battery with a C rating of 0.5C, charge/discharge current will be ---------- A.
Option A:	100
Option B:	50
Option C:	10
Option D:	2

Q6.	Thermalization losses account for how much percentage in a single junction solar cell?
Option A:	22
Option B:	44
Option C:	33
Option D:	11
Q7.	The slope of the I-V characteristics near to the constant voltage source in PV implies a ---------- resistance
Option A:	Series
Option B:	Parallel
Option C:	Lateral
Option D:	Bypass
Q8.	The electrical capacity that is lost when a battery is not being used is
Option A:	Self-Discharge
Option B:	DoD
Option C:	SoC
Option D:	Life cycle
Q9.	Ratio of power extracted by the rotor of wind mill to the maximum power available in the wind stream is called ----------
Option A:	Tip to Speed Ratio
Option B:	Solidity
Option C:	Cut in Speed
Option D:	Power Coefficient
Q10.	In Constant voltage method of Maximum Power Point Tracking, the ratio of Vmpp and Voc is nearly
Option A:	0.5
Option B:	0.78
Option C:	0.64
Option D:	1
Q11.	As the incident insolation on a PV cell increases,
Option A:	both short circuit current and open circuit voltage increase linearly
Option B:	open circuit voltage increases logarithmically
Option C:	short circuit current increases logarithmically
Option D:	both short circuit current and open circuit voltage increase logarithmically
Q12.	As the temperature increases,
Option A:	the peak power of PV cell decreases
Option B:	the peak power of PV cell increases
Option C:	the short circuit current value decreases
Option D:	the open circuit voltage value increases

Q13.	Fuel Cell more sensitive to Carbon Monoxide poisoning
Option A:	MCFC
Option B:	SOFC
Option C:	PEMFC
Option D:	None of these
Q14.	Which type of axis does a Savonius rotor has?
Option A:	Vertical
Option B:	Horizontal
Option C:	Lateral
Option D:	Parallel
Q15.	Which type of solar cell is having maximum efficiency?
Option A:	Monocrystalline
Option B:	Polycrystalline
Option C:	Amorphous
Option D:	Multi-crystalline
Q16.	Which of the flow field in fuel cell is having high pressure drop?
Option A:	Series
Option B:	Parallel
Option C:	Serpentine
Option D:	straight
Q17.	The catalyst used in PEMFC is
Option A:	Nickel
Option B:	Silver
Option C:	Platinum
Option D:	SiC
Q18.	What is name of a small electric power system independent of utility grids, located on the user side to meet end users demands?
Option A:	Disbersed Generation
Option B:	Direct Generation
Option C:	Indirect Generation
Option D:	Distributed Generation
Q19.	What is the total charge capacity in Ah available from a battery bank consisting of 6 parallel branches, each branch consisting of 3 batteries, each battery rated for 12V, 100Ah, DoD of 80%.
Option A:	360
Option B:	480
Option C:	600
Option D:	1200
Q20.	How many types of geothermal power plants are there?

Option A:	2
Option B:	5
Option C:	3
Option D:	4
Q21.	The bio methane is produced by ---- of biomass.
Option A:	Aerobic oxidation
Option B:	Anaerobic oxidation
Option C:	Fermentation
Option D:	Rectification
Q22.	Why is the compressed air in a storage system cooled before storage?
Option A:	Prevent heat loss during storage
Option B:	Improve turn around efficiency
Option C:	Reduces storage volume
Option D:	Help in a hybrid system
Q23.	How much energy can be stored by 500 kg of water raised by 100-m in a pumped hydro installation? Assume no pumping losses, density of water to be 1000 kg/m^3 and g = 9.81 m/s^2
Option A:	0.5MJ
Option B:	0.8MJ
Option C:	1MJ
Option D:	0.3MJ
Q24.	---------- is a glazing which limits the radiation and convection heat losses.
Option A:	Insulation
Option B:	Absorber plate
Option C:	Selective surface
Option D:	Transparent cover
Q25.	Example of a renewable energy source
Option A:	Coal
Option B:	Natural gas
Option C:	Geothermal
Option D:	Crude oil

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	C
Q3.	D
Q4	B
Q5	B
Q6	C
Q7	A
Q8.	A
Q9.	D
Q10.	B
Q11.	B
Q12.	A
Q13.	C
Q14.	A
Q15.	A
Q16.	C

Q17.	C
Q18.	D
Q19.	B
Q20.	C
Q21.	B
Q22.	C
Q23.	A
Q24.	D
Q25.	C