

BRAINWARE UNIVERSITY

Term End Examination 2021 - 22 Programme – Diploma in Electronics & Communication Engineering Course Name – Renewable Energy Course Code - DECE604 (Semester VI)

Time allotted: 1 Hrs.15 Min. Full Marks: 60 [The figure in the margin indicates full marks.] Group-A (Multiple Choice Type Question) 1 x 60=60 Choose the correct alternative from the following: (1) Which of the following are renewable energy resource? b) Wind a) Solar c) Geothermal d) All of above (2) When solar radiation falls on earth surface, the temperature of a) Land mass raises faster than water b) Land mass raises slower than water d) Land mass raises but of water remains at fixed lev c) Land mass and water raises uniformly e1 (3) Maximum wind energy available is proportional to b) (Wind velocity)3 a) Air density d) All of above c) (Rotor diameter)2 (4) Which of the following area is preferred for solar power plants? a) Coastal areas b) Hot arid areas c) Mountain areas d) High rainfall areas (5) Photo voltaic cell converts a) Chemical energy to electrical energy b) Solar radiation into electrical energy d) Thermal energy into electrical energy c) Solar radiation into thermal energy (6) The efficiency of solar cells is about a) 25% b) 15% c) 40% d) 60% (7) Wind energy can be used to a) generate electricity b) operate flour mills c) draw underground water d) all of the above

b) solar

d) heat

(8) Wind energy is harnessed as energy with the help of windmill or turbine.

a) mechanical

c) electrical

(9) Favourable winds for small Scale application exists	
a) everywhere on the earth's surface	b) on 75% of the earth's surface
c) on 50% of the earth's surface	d) on 25% of the earth's surface
(10) How much is the energy available in the winds over t	he earth surface is estimated to be?
a) 2.9 X 120 MW	b) 1.6 X 107 MW
c) 1 MW	d) 5MW
(11) EPF stand for	
a) energy pattern factor	b) energy pattern fraction
c) efficiency pattern factor	d) none of the above
(12) Which type of generator are made use in wind turbing	es?
a) Recreational generators	b) Synchronous generator
c) Asynchronous generator	d) Alternator
(13) A two blade wind turbine produces maximum power	when the tip- speed ratio is equal to
a) π	b) 2π
c) 3π	d) 0.593
(14) A wind turbine designed to come into operation at a r	ninimum wind speed is called
a) cut in velocity	b) cut out velocity
c) windward	d) upwind
(15) For the same rotor diameter, as the wind speed increa	ses, total power developed
a) decreases	b) increases
c) remains constant	d) may increase or decreases, but depend on wind s
(16) Reflecting mirrors used for exploiting solar energy ar	e called
a) Mantle	b) Ponds
c) Diffusers	d) Heliostats
(17) A pyranometer is used for mesurement of	,
a) Direct radiation only	b) Diffuse radiation only
c) Direct as well as diffuse radiation	d) All of the above
(18) The world's first 100% solar powered airport located	•
a) Cochin, Kerala	b) Bengaluru, Karnataka
c) Chennai, Tamil Nadu	d) Mumbai, Maharashtra
(19) The power from the sun intercepted by the earth is ap	•
a) 1.8 x 108 MW	b) 1.8 x 1011 MW
c) 1.8 x 1014 MW	d) 1.8 x 1017 MW
(20) The efficiency of various types of collectors	
a) increases, decreasing	b) decreases, increasing
c) remains same, increasing	d) depends upon type of collector
(21) The value of Solar Constant is	7 1 1 31
a) 1347 W/m2	b) 1357 W/m2
c) 1367 W/m2	d) 1377 W/m2
(22) The angle made by the plane surface with the horizon	•
a) Latitude	b) Slope
c) Surface azimuth angle	d) Declination
(23) The global radiation reaching a horizontal surface on	
a) Hourly beam radiation + Hourly diffuse radiation	
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c) Hourly beam radiation / Hourly diffuse radiation	d) Hourly diffuse radiation / Hourly beam radiation
(24) Uneven heating occurs on land surface and water bo	dies are due to
a) Air Currents	b) Solar radiation
c) Lunar eclipse	d) None of the above
(25) Wind energy is harnessed as energy with the	help of windmill or turbine.
a) Mechanical	b) Solar
c) Electrical	d) Heat
(26) How much wind power does India hold?	
a) 20,000 MW	b) 12,000 MW
c) 140,000 MW	d) 5000 MW
(27) What type of energy is wind energy?	
a) Renewable energy	b) Non-renewable energy
c) Conventional energy	d) Commercial energy
(28) What is the diameter of wind turbine blades?	
a) 320 feet	b) 220 feet
c) 80 feet	d) 500 feet
(29) When was the first electric car invented?	
a) 1830	b) 1985
c) 1832	d) 1945
(30) What type of Motor Used in Electric Vehicles?	,
a) DC Motor	b) AC Motor
c) AC and DC both	d) None of the above
(31) This is also called a biogas	
a) biobutanol	b) bodies
c) bioethanol	d) biomethane
(32) Bioethanol is mixed with to prepare transp	port fuel
a) oil	b) petrol
c) kerosene	d) diesel
(33) The aerobic digestion of sewage is utilized in the pro-	oduction of
a) metal articles	b) biofuels
c) biomass	d) synthetic fuels
(34) The efficiency of a solar cell may be in the range	
a) 2 to 5%	b) 10 to 15%
c) 30 to 40%	d) 70 to 80%
(35) Which of the following constitutes the major load fo	r an automobile battery?
a) Brake light	b) Self-starter
c) Parking lights	d) Spark plugs
(36) Battery container should be acid resistance therefore	it is made up of
a) Glass	b) Plastic
c) Wood	d) All of the above
(37) In a fuel cell cathode is of	
a) Oxygen	b) Ammonia
c) Hydrogen	d) Carbon monoxide
(38) The current density of a photo voltaic cell ranges fro	•
a) $10 - 20 \text{ mA/cm}^2$	b) 40 – 50 mA/cm2
,	,

c) $20 - 40 \text{ mA/cm}2$	d) $60 - 100 \text{ mA/cm2}$
(39) What are used to turn wind energy into electrical en	nergy?
a) Turbine	b) Generators
c) Yaw motor	d) Blades
(40) When did the development of wind power in India	began?
a) 1965	b) 1954
c) 1990	d) 1985
(41) A device which is used as device for showing direc e?	tion wind as well used as a decorative purpos
a) Windsocks	b) Weather vane
c) Pinwheels	d) Anemometers
(42) Which type of windmill blades are made out of she	et metal or aluminum?
a) Horizontal axis with two aerodynamic bladesc) Horizontal axis multi-bladed type windmill	b) Horizontal axis propeller type windmilld) Sail type windmill
(43) Which is the wind direction showing device that sp	ins perpendicularly?
a) Downwind location	b) Up wind location
c) Windward	d) Leeward
(44) Name the windmill which has four blades mounted	on a central post.
a) Post mill	b) Smock mill
c) Tower mill	d) Fan mill
(45) How is the action of yaw controlled in small turbine	es?
a) Tail vane	b) Blade
c) Shaft	d) Yaw motor
(46) Which type of wind mills blade are made out of clo	th?
a) Horizontal axis with two aerodynamic blades	b) Horizontal axis propeller type windmill
c) Horizontal axis multi-bladed type wind mil	d) . Sail type windmill
(47) Which of the area can often displaces conventional	fuel by renewable energy?
a) Space heating	b) Transportation
c) Electricity generation	d) All of these
(48) energy sources provide energy in dilute for	m.
a) Non-Renewable	b) Conventional
c) Nuclear	d) Renewable
(49) The availability of Renewable energy sources is	
a) uncertain	b) constant
c) high	d) regular
(50) Renewable energy-based power plants have	_
a) negligible fuel cost	b) low energy availability
c) negligible production capacity	d) fuel storage tanks
(51) Most of the Renewable energy sources are	_
a) location-specific	b) universally available
c) highly efficient	d) polluting
(52) What is the major problem with wind energy?	
a) Generates energy from wind	b) It is a renewable source of energy
c) Requires large area of land	d) Compact and does not require large area of land
(53) What are three relevant bands of solar radiation?	

a) UV, infrared and far infrared b) UV, visible and infrared c) Ultrasonic, infrared and visible d) UV, ultrasonic and near infrared (54) What is direct solar radiation? a) Solar radiation directly received by earth's surface b) Cosmic radiation directly received by earth's surf c) Solar radiation received by earth's surface after re d) Cosmic radiation received by earth's surface after flection reflection (55) What is aperture area in a solar collector? b) Area in the receiver that receives the solar radiati a) Area of the system c) Area occupied by the system after installation d) Cross-sectional area of the receiver (56) Why is a transparent cover used in a flat plate collector? a) To maximize transmission of the incident sunlight b) To minimize transmission of the incident sunlight into the box into the box d) To ensure partial transmission of the incident sun c) To entirely reflect the incident sunlight back light into the box (57) Evacuated flat-plate solar collectors are a type of a) concentrating collectors b) photovoltaic technology c) non-concentrating collectors d) solar stills (58) Which of the following is used to make a glass-glass evacuated tubes? a) Borosilicate glass b) Carbon d) Plastic coating c) Wood (59) Why does flat plate collector perceived to have higher efficiency than evacuated tube solar collec tor in terms of area? a) Because flat plate collector has a large installation b) Because evacuated tube collector is compact c) Because of the vacuum gap in evacuated tube coll d) Because of the vacuum gap in flat plate collectors ectors (60) Which of the following are combined to form an evacuated flat plate solar collector? a) Flat plate solar collectors and evacuated-tube sola b) Flat plate solar collectors and bowl collectors r collectors c) Bowl collectors and evacuated-tube solar collecto d) Polymer collectors and bowl collectors