

# Online Examinations (Even Sem/Part-I/Part-II Examinations 2020 - 2021)

Course Name - --Renewable Energy

Course Code - DECE604

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Answer all the questions. Each question carry one mark.

9. 1.Which of the following are renewable energy resource?

*Mark only one oval.*

- Solar
- Wind
- Geothermal
- All of above

10. 2.Which of the area can often displaces conventional fuel by renewable energy?

*Mark only one oval.*

- Space heating
- Transportation
- Electricity generation
- All of above

11. 3.Photovoltaic cell converts solar energy into

*Mark only one oval.*

- Heat energy
- Electric energy
- Mechanical energy
- Chemical energy

12. 4.Which is the largest amount of installed grid interactive renewable power capacity in India?

*Mark only one oval.*

- Wind power
- Solar power
- Biomass power
- Small Hydro power

13. 5.What is the main source of wind?

*Mark only one oval.*

- Uneven land
- Sun
- .
- Seasons

14. 5.Wind speed suitable to operate wind turbines is

*Mark only one oval.*

- 5 – 25 m/s
- 10 – 35 m/s
- 20 – 45 m/s
- 30 – 55 m/s

15. 7.When solar radiation falls on earth surface, the temperature of

*Mark only one oval.*

- Land mass raises faster than water
- Land mass raises slower than water
- Land mass and water raises uniformly
- Land mass raises but of water remains at fixed level

16. 8. Maximum wind energy available is proportional to

*Mark only one oval.*

- Air density
- (Wind velocity)<sup>3</sup>
- (Rotor diameter)<sup>2</sup>
- All of above

17. 9. An anemometer is an instrument used for measurement of

*Mark only one oval.*

- Solar radiation
- Wind speed
- Temperature gradients
- Swept area

18. 10. Solar PV systems are

*Mark only one oval.*

- Connected to the power grid
- Used to sell power to the grid
- Stand alone source of electricity
- All of above

19. 11.Which of the following area is preferred for solar power plants?

*Mark only one oval.*

- Coastal areas
- Hot arid areas
- Mountain areas
- High rainfall areas

20. 12.Photo voltaic cell converts

*Mark only one oval.*

- Chemical energy to electrical energy
- Solar radiation into electrical energy
- Solar radiation into thermal energy
- Thermal energy into electrical energy

21. 13.Solar cells are made of

*Mark only one oval.*

- Aluminium
- Germanium
- Silicon
- Cadmium

22. 14.The efficiency of solar cells is about

*Mark only one oval.*

25%

15%

40%

60%

23. 15.Voltage of solar cells is

*Mark only one oval.*

0.5 to 1 V

1 to 2 V

2 to 3 V

4 to 5 V

24. 16.Wind energy can be used to

*Mark only one oval.*

generate electricity

operate flour mills

draw underground water

all of the above

25. 17.The wind speed is measured using an instrument called

*Mark only one oval.*

- hydrometer
- Manometer
- anemometer
- wind vane

26. 18.Surface layer is the air layer considered from the height of local obstruction to a height of about 50m

*Mark only one oval.*

- 50m
- 100m
- 150m
- 200m

27. 19.Wind energy is harnessed as \_\_\_\_\_ energy with the help of windmill or turbine.

*Mark only one oval.*

- mechanical
- solar
- electrical
- heat

28. 20. In which region winds are stronger and constant?

*Mark only one oval.*

- deserts
- offshore
- low altitudes sites
- all of above

29. 21. Favourable winds for small Scale application exists

*Mark only one oval.*

- everywhere on the earth's surface
- on 75% of the earth's surface
- on 25% of the earth's surface
- on 50% of the earth's surface

30. 22. \_\_\_\_ force is responsible for forcing the global winds towards westerly direction.

*Mark only one oval.*

- Coriolis
- Gravitational
- Centripetal
- Centrifugal

31. 23.The wind intensity can be described by

*Mark only one oval.*

- reynolds number
- mach number
- beaufort number
- froude number

32. 24.How much is the energy available in the winds over the earth surface is estimated to be?

*Mark only one oval.*

- 2.9 X 120 MW
- 1.6 X 10<sup>7</sup> MW
- 1 MW
- 5MW

33. 25.How much wind power does India hold?

*Mark only one oval.*

- 20,000 MW
- 12,000 MW
- 140,000 MW
- 5000 MW

34. 26.EPF stand for

*Mark only one oval.*

- energy pattern factor
- energy pattern fraction
- efficiency pattern factor
- none of the above

35. 27.A rotor installed in a fixed orientation with the swept area perpendicular to the pre dominate wind direction is called \_\_\_\_\_

*Mark only one oval.*

- nacelle
- yaw fixed machines
- blades
- anemometer

36. 28.Which type of generator are made use in wind turbines?

*Mark only one oval.*

- Recreational generators
- Synchronous generator
- Asynchronous generator
- Alternator

37. 29.How much ideal efficiency should practical turbine have?

*Mark only one oval.*

10 – 12%

18 – 25%

80 – 90%

50 – 70%

38. 30.Stalled flow occurs when the value of the incident angle is

*Mark only one oval.*

0 degree

180 degree

comparable

beyond 16 degree

39. 31.A wind turbine designed to come into operation at a minimum wind speed is called

*Mark only one oval.*

cut in velocity

cut out velocity

windward

upwind

40. 32. For the same rotor diameter, as the wind speed increases, total power developed

*Mark only one oval.*

- decreases
- increases
- remains constant
- may increase or decrease, but depend on wind speed

41. 33. For satellite the source of energy is.....

*Mark only one oval.*

- Cryogenic storage
- Battery
- Solar cell
- Any of the above

42. 34. Reflecting mirrors used for exploiting solar energy are called.....

*Mark only one oval.*

- Mantle
- Ponds
- Diffusers
- Heliostats

43. 35.A pyranometer is used for measurement of.....

*Mark only one oval.*

- Direct radiation only
- Diffuse radiation only
- Direct as well as diffuse radiation
- All of the above

44. 36.A Solar cell is an electrical device that converts the energy of light directly into electricity by the \_\_\_\_\_

*Mark only one oval.*

- Photovoltaic effect
- Chemical effect
- Atmospheric effect
- Physical effect

45. 37.The world's first 100% solar powered airport located at \_\_\_\_\_

*Mark only one oval.*

- Cochin, Kerala
- Bengaluru, Karnataka
- Chennai, Tamil Nadu
- Mumbai, Maharashtra

46. 38.The power from the sun intercepted by the earth is approximately

*Mark only one oval.*

- 1.8 x 10<sup>8</sup> MW
- 1.8 x 10<sup>11</sup> MW
- 1.8 x 10<sup>14</sup> MW
- 1.8 x 10<sup>17</sup> MW

47. 39.The following is an indirect method of Solar energy utilization

*Mark only one oval.*

- Wind energy
- Biomass energy
- Wave energy
- All of the above

48. 40.The efficiency of various types of collectors \_\_\_\_\_ with \_\_\_\_\_ temperature

*Mark only one oval.*

- increases, decreasing
- decreases, increasing
- remains same, increasing
- depends upon type of collector

49. 41. Maximum efficiency is obtained in

*Mark only one oval.*

- Flat plate collector
- Evacuated tube collector
- merge sort
- Paraboloid dish collector

50. 42. The value of Solar Constant is

*Mark only one oval.*

- 1347 W/m<sup>2</sup>
- 1357 W/m<sup>2</sup>
- 1367 W/m<sup>2</sup>
- 1377 W/m<sup>2</sup>

51. 43. Solar radiation flux is usually measured with the help of a

*Mark only one oval.*

- Anemometer
- Pyranometer
- Sunshine recorder
- All of the above

52. 44.The angle made by the plane surface with the horizontal is known as

*Mark only one oval.*

- Latitude
- Slope
- Surface azimuth angle
- Declination

53. 45.The global radiation reaching a horizontal surface on the earth is given by

*Mark only one oval.*

- Hourly beam radiation + Hourly diffuse radiation
- Hourly beam radiation – Hourly diffuse radiation
- Hourly beam radiation / Hourly diffuse radiation
- Hourly diffuse radiation / Hourly beam radiation

54. 46.The following factor(s) affects the distribution of wind energy

*Mark only one oval.*

- Mountain chains
- The hills, trees, and buildings
- Frictional effect of the surface
- All of the above

55. 47.Uneven heating occurs on land surface and water bodies are due to \_\_\_\_\_

*Mark only one oval.*

- Air Currents
- Solar radiation
- Lunar eclipse
- None of the above

56. 48.Wind energy is harnessed as \_\_\_\_\_ energy with the help of windmill or turbine.

*Mark only one oval.*

- Mechanical
- Solar
- Electrical
- Heat

57. 49.The following is (are) the classification of winds

*Mark only one oval.*

- Global wind
- Local wind
- Both (A) and (B)
- None of the above

58. 50.How much wind power does India hold?

*Mark only one oval.*

- 20,000 MW
- 12,000 MW
- 140,000 MW
- 5000 MW

59. 51.What type of energy is wind energy?

*Mark only one oval.*

- Renewable energy
- Non-renewable energy
- Conventional energy
- Commercial energy

60. 52.What is used to turn wind energy into electrical energy?

*Mark only one oval.*

- Turbine
- Generators
- Yaw motor
- Blades

61. 53. At what range of speed is the electricity from the wind turbine is generated?

*Mark only one oval.*

- 100 – 125 mph
- 450 – 650 mph
- 250 – 450 mph
- 30-35 mph

62. 54. which of the following is NOT the type of Hybrid Vehicle?

*Mark only one oval.*

- Plug-in Hybrid
- Parallel Hybrid
- Natural Gas For Vehicles
- Series Hybrid

63. 55. What type of Motor Used in Electric Vehicles?

*Mark only one oval.*

- DC Motor
- AC Motor
- AC and DC both
- None of the above

64. 56. Biomass is used in the production of

*Mark only one oval.*

- fibers
- chemicals
- transportation fuels
- biochemicals

65. 57. In biomethane, the percentage of carbon dioxide is

*Mark only one oval.*

- 55-60
- 35-45
- 30-40
- 32-43

66. 58. Bioethanol is mixed with \_\_\_\_\_ to prepare transport fuel

*Mark only one oval.*

- oil
- petrol
- kerosene
- diesel

67. 59. Bioethanol is denatured alcohol, also referred to as

*Mark only one oval.*

- methylene
- ethylene
- ethylene glycol
- methylated spirit

68. 60. The aerobic digestion of sewage is utilized in the production of

*Mark only one oval.*

- metal articles
- biofuels
- biomass
- synthetic fuels

69. 61. Which of the following material is used in solar cells?

*Mark only one oval.*

- Barium
- Silicon
- Silver
- Selenium

70. 62.The efficiency of a solar cell may be in the range

*Mark only one oval.*

- 2 to 5%
- 10 to 15%
- 30 to 40%
- 70 to 80%

71. 63.Which of the following constitutes the major load for an automobile battery?

*Mark only one oval.*

- Brake light
- Self-starter
- Parking lights
- Spark plugs

72. 64.Batteries are charged by

*Mark only one oval.*

- Rectifiers
- Engine generator sets
- Motor generator sets
- Any of the above

73. 65. Battery container should be acid resistance therefore it is made up of

*Mark only one oval.*

- Glass
- Plastic
- Wood
- All of the above

74. 66. In a fuel cell cathode is of

*Mark only one oval.*

- Oxygen
- Ammonia
- Hydrogen
- Carbon monoxide

75. 67. What is the maximum possible output of a solar array?

*Mark only one oval.*

- 300 W/m<sup>2</sup>
- 100 W/m<sup>2</sup>
- 250 W/m<sup>2</sup>
- 500 W/m<sup>2</sup>

76. 68.The current density of a photo voltaic cell ranges from

*Mark only one oval.*

- 10 – 20 mA/cm<sup>2</sup>
- 40 – 50 mA/cm<sup>2</sup>
- 20 – 40 mA/cm<sup>2</sup>
- 60 – 100 mA/cm<sup>2</sup>

77. 69.What are used to turn wind energy into electrical energy?

*Mark only one oval.*

- Turbine
- Generators
- Yaw motor
- Blades

78. 70.What type of energy is wind energy?

*Mark only one oval.*

- Renewable energy
- Non-renewable energy
- Conventional energy
- Commercial energy

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