قائمة الاسئلة

تقنيات الطاقة المتجددة- كلية الهندسة - قسم الكهرباء- المستوى ..الثالث... - ...التخصص.قوى والات.- ..الزمن..ساعتان. - درجة هذا الاختبار (100)

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1) One of the indictors to ensure access to affordable, reliable, sustainable and modern energy for all is:
(a) Increased access to modern energy.
(b) Increased national percentage of renewable energy.
(c) Increased global percentage of renewable energy.
(d) The percentage of population with access to electricity.

1) - a
2) - b
3) - c
4) + d

2) **Q 2:** Progress towards ensuring access to affordable, reliable, sustainable and modern energy for all is measured by:
(a) Universal access to modern energy and increase global percentage of renewable energy.
(b) Double the improvement in energy efficiency, Promote access to research, technology and investments in clean energy.
(c) Expand and upgrade energy services for developing countries
(d) Answers (a), (b) and (c).

1) - a
2) - b
3) - c
4) + d

3) "Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy" is:
(a) One of the Sustainable Development Goals.
(b) An important indictor toward building universe knowledge and capacity in renewable energy.
(c) The first step towards achieving sustainable development.
(d) Guaranteeing achieving sustainable development faster.

1) + a
2) - b
3) - c
4) - d

4) : Sustainable energy is defined as the resource that:
(a) Can be maintained for the foreseeable future.
(b) Can be maintained for the foreseeable future without compromising or threatening future generations.
(c) The energy that meets the needs of the present without compromising the ability of future generations to meet their own needs.
(d) Is usable and created through naturally recurrent processes such as wind blowing or the sun shining..

1) - a
2) + b
3) - c
4) - d

5) : Sustainable development is defined as the development that:
(a) Can be maintained for the foreseeable future.
(b) Can be maintained for the foreseeable future without compromising or threatening future generations.
(c) Meets the needs of the present without compromising the ability of future generations to meet their own needs.
(d) Is usable and created through naturally recurrent processes such as wind blowing or the sun shining..

1) - a
2) - b
3) + c

4) - d

6) : Renewable energy is defined as the energy that:
(a) Can be maintained for the foreseeable future.
(b) Can be maintained for the foreseeable future without compromising or threatening future generations.
(c) Meets the needs of the present without compromising the ability of future generations to meet their own needs.
(d) Is usable and created through naturally recurrent processes such as wind blowing or the sun shining.

1) - a
2) - b
3) - c
4) + d

7) : Renewable energy:
(a) Took millions of years to form, and their rate of consumption far outpaces their rate of replenishment
(b) Is a usable energy created through naturally recurrent processes.
(c) Is always available to be used at any time of the year.
(d) Price is the main problem making it less attractive.

1) - a
2) + b
3) - c
4) - d

8) : Renewable energy:
(a) Is sometime known as sustainable energy.
(b) Is always sustainable energy.
(c) Is not considered sustainable energy if it can negatively impact the environment.
(d) Is considered sustainable energy as long as it is naturally created.

1) - a
2) - b
3) + c
4) - d

9) : Which of the following is renewable and sustainable energy sources:
(a) Solar Energy.
(b) Geothermal Energy.
(c) Wind Energy
(d) All of them.

1) - a
2) - b
3) - c
4) + d

10) : A microgrid can:
(a) Operate in tandem with the main grid or disconnect.
(b) Supply power to up to 10 MW.
(c) Can not operate independently from the main grid.
(d) All answers.

1) + a
2) - b
3) - c
4) - d

11) Which of the following is renewable energy sources but not sustainable energy sources:
(a) Tidal Energy.
(b) Gas fired energy.
(c) Geothermal Energy.
(d) No correct answer.

1) - a
2) - b
3) - c
4) + d

12) Which of the following is an advantage of the renewable energy:
(a) There are geographic limitations, it is not always reliable, and it has high upfront costs.
(b) It's infinite, it reduces dependency on fossil fuel and it reduces energy prices.
(c) It is not available all time, its prices per kWh is expensive, and it needs specialized energy experts.
(d) It creates new jobs, it is free energy source, it needs no maintenance.

1) - a
2) + b
3) - c
4) - d

13) While determining the system configuration for Solar Mini-Grid system following are considered:
(a) Target consumer and type of electrical appliances to be operated, load size and daily energy demand.
(b) Correlation with electrical load on a daily, weekly and seasonal scale as well as Installation and costs
(c) Climatic conditions of locality and geographical spread of energy source and loads.
(d) All answers.

1) - a
2) - b
3) - c
4) + d

14) PV System economic can be assisted through:
(a) Using Payback period only.
(b) Life Cycle Costs only.
(c) Eather Payback period or Life Cycle Costs.
(d) Both Payback period and Life Cycle Costs.

1) - a
2) - b
3) + c
4) - d

15) Energy gross technical potential is:
(a) The achievable potential using known technologies taking into account technical factors and land-use.
(b) The physical, meteorological or biochemical energy available in a certain region and at a certain time or period.
(c) . The achievable potential using known technologies taking into account technical factors and land-use and it takes into account electricity grid accessibility.
(d) A backup renewable energy source to be used in case the main energy source fail to provide enough energy for the loads.

1) + a
2) - b
3) - c
4) - d

16)

PV System is considered financially attractive if:
(a) It's payback period is not too long.
(b) It's payback period is equal to the project's life.
(c) It's payback period is around 6 months.
(d) No correct answer.

1) + a
2) - b
3) - c
4) - d

17) Energy practical potential is:
(a) The achievable potential using known technologies taking into account technical factors and land-use.
(b) The physical, meteorological or biochemical energy available in a certain region and at a certain time or period.
(c) . The achievable potential using known technologies taking into account technical factors and land-use and it takes into account electricity grid accessibility.
(d) A backup renewable energy to be used in case the main energy source fail to provide enough energy for the loads.

1) - a
2) - b
3) + c
4) - d

18) Which of the following renewable energy sources has the highest gross technical potential in Yemen:
(a) Biomass.
(b) Wind.
(c) Hydropower in major wadies.
(d) Solar.

1) - a
2) - b
3) - c
4) + d

19) Which of the following renewable energy sources has the highest practical potential in Yemen:
(a) Biomass.
(b) Wind.
(c) Hydropower in major wadies.
(d) Solar.

1) - a
2) + b
3) - c
4) - d

20) Which of the following Key Power Sector Issue still exist in Yemen:
(a) High shortage of power generation capacity.
(b) No clear future plan for building mor renewable energy.
(c) No clear future plan for applying Energy Efficiency measures.
(d) All of them.

1) - a
2) - b
3) - c
4) + d

21) Which of the following supply options is least likely to be used to improve the Yemen power supply:
(a) Interconnection with the national grids of neighboring countries.
(b) Go for natural gas generation.
(c) Building mor diesel power generation.
(d) All of them.

1) - a
2) - b
3) - c
4) + d

22) Which of the following supply options is most viable to be used to improv the Yemen power supply:
(a) Go for renewable energy power generation.
(b) Enforcing Energy Efficiency (EE) measures.
(c) Applying more Demand Side Management (DSM)
(d) All of them.

1) - a
2) - b
3) - c
4) + d

23) : Which of the following measures the Government need to take to Promote Renewable Energies:
(a) Adoption of REN and EE policy objectives and targets and improve the institutional set-up within the power sector.
(b) Enforcing Energy Efficiency (EE) measures.
(c) Applying more Demand Side Management (DSM)
(d) Building number of wind energy power generation stations.

1) + a
2) - b
3) - c
4) - d

24) In Yemen, which of the following renewable energy sources still need to be been examined:
(a) Small wind energy systems.
(b) Concentrated Solar Power (CSP).
(c) Tidal energies.
(d) Green hydrogen.

1) - a
2) - b
3) + c
4) - d

25) **The angle that a beam of light striking horizontal slope affects:**
(a) The insolation intensity.
(b) The day length
(c) The Sun's zenith angle.
(d) No correct answer.

1) + a
2) - b
3) - c
4) - d

26) **STC** refers to a number of Solar PV criteria of a solar module when:
(a) Light Intensity is 1000 w/m^2, Atmospheric Density is 1.5 AM and cell temperature is 20 C°.
(b) Light Intensity is 1000 w/m^2, Atmospheric Density is 1.5 AM and cell temperature is 25 C°.
(c) Light Intensity is 1000 w/m^2, Atmospheric Density is 1.5 AM and cell temperature is 30 C°.
(d) Light Intensity is 1000 w/m^2, Atmospheric Density is 1.5 AM and cell temperature is 35 C°.

1) - a
2) + b
3) - c
4) - d

27) For a solar panel with I_{sc} = 9.65 A, V_{oc} = 47.42 V, I_{mp} 9.25 A and V_{mp} = 39.58 V is FF is:
(a) 0.80.
(b) 0.87.
(c) 1.25.
(d) 1.15.

1) + a
2) - b
3) - c
4) - d

28) : In Yemen, the output of a solar PV panel of 610 W_p capacity in a normal day is approximately
(a) 3.98 kWh
(b) 5.45 kWh
(c) 7.56 kWh
(d) 2.68 kWh

1) - a
2) - b
3) - c
4) + d

29) Photovoltaic (PV) module
(a) Has no moving parts
(b) Converts solar energy into electricity
(c) Does not produce greenhouse gases,
(d) All answers.

1) - a
2) - b
3) - c
4) + d

30) The increase in temperature over 25 C° will result in:
(a) Maximum output power of the solar panel decreases and Open Circuit Voltage increases.
(b) Maximum output power of the solar panel and Open Circuit Voltage decrease.
(c) Maximum output power of the solar panel and Open circuit Voltage increase.
(d) Maximum output power of the solar panel increases and Open Circuit Voltage decreases.

1) - a
2) + b
3) - c
4) - d

31) Which type of solar cells has highest efficiency:
(a) Amorphous.
(b) Polycrystalline.
(c) Monocrystalline.
(d) No correct Answer.

1) - a
2) - b
3) + c
4) - d

32) Consider Ingress (IP) Protection specification for outdoor solar component as follows:
(a) IP65
(b) IP45.
(c) IP68.
(d) IP61.

1) + a
2) - b
3) - c
4) - d

33) **Flooded Lead-Acid (FLA) Batteries are:**
(a) Economic and cheap but its efficiency is less than 60%.
(b) Economic and cheap and its efficiency is 80%.to 85%.
(c) Economic and cheap and not efficient.
(d) Very cheap and as efficient as the Sealed lead-acid Batteries.

1) - a
2) + b
3) - c
4) - d

34) In on- grid solar PV system, which component may not used
(a) Solar inverter
(b) Solar module
(c) Solar battery
(d) PV panel

1) - a
2) - b
3) + c
4) - d

35) Voltage and frequency stability issues resulted from Solar Grid Integration may be addressed by:
(a) Adopting Power Fluctuation Smoothing techniques.
(b) Including advanced control systems.
(c) Use of flexible AC transmission systems.
(d) All answers.

1) - a
2) + b
3) - c
4) - d

36) The function of a solar collector is of converting solar energy into:
(a) Thermal energy.
(b) Radiations
(c) Electrical energy.
(d) Mechanical energy.

1) + a

2) - b
3) - c
4) - d

37) Temperature attained by cylindrical parabolic collector is of the order of
(a) 50 C°– 100 C°.
(b) 100 C°– 150 C°.
(c) 500 C°-570 C°.
(d) 300 C°– 550 C°.

1) - a
2) - b
3) - c
4) + d

38) Central receiver system uses:
(a) A field of sun tracking reflectors, called heliostats.
(b) A collector field comprises many troughs in parallel rows
(c) A parabolic-shaped point focus concentrator
(d) No correct answer

1) + a
2) - b
3) - c
4) - d

39) Wind flows from:
(a) High pressure area to, high pressure area.
(b) High pressure area to, low pressure area.
(c) Low pressure area to, high pressure area.
(d) Low pressure area to, Low pressure area.

1) - a
2) + b
3) - c
4) - d

40) Wind turbines convert wind energy to:
(a) Mechanical energy.
(b) Electrical energy.
(c) Heat energy.
(d) Thermal energy.

1) + a
2) - b
3) - c
4) - d