National Testing Agency

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REAL TIME POWER SYSTEM ANALYSIS AND SMART GRID

Group Number :	1
Group Id :	90958227
Group Maximum Duration :	0
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Group Marks:	100

Real Time Power System Analysis and Smart Grid

Section Id :	90958227
Section Number :	1
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	100
Number of Questions to be attempted:	100
Section Marks:	100
Display Number Panel:	Yes
Group All Questions:	No

Sub-Section Number:	1
Sub-Section Id:	90958229
Question Shuffling Allowed :	Yes

Question Number : 1 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

How is the voltage and frequency controlled in automatic generation control?

A. By controlling the excitation
B. By controlling the turbine action
C. Turbine speed control for voltage and excitation control for frequency
D. Excitation control for voltage and turbine speed control for voltage.

Options :

1. A
2. B
3. C
4. D

**Question Number : 2 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**
Correct Marks : 1 Wrong Marks : 0

With the use of high speed circuit breakers, which among the following stability is

increased?

A. Steady state stability
B. Transient stability
C. Frequency stability
D. All of these

Options :
1. A
2. B
3. C
4. D

**Question Number : 3 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**
Correct Marks : 1 Wrong Marks : 0

Which among these is related to the critical clearing time of a fault in a power system?

A. Transient stability limit
B. Steady state stability limit
C. Frequency limit
D. All of these

Options :
1. A
2. B
3. C
4. D

**Question Number : 4 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**
Correct Marks : 1 Wrong Marks : 0

Which among these cannot be determined from equal area criterion?

A. Critical clearing angle
B. Critical clearing time
C. Transient stability limit
D. Both (a) and (b)

Options :

1. A
2. B
3. C
4. D

Question Number : 5 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

What are the common assumptions made for the equal area criterion?

A. The transmission line and machine resistances are neglected.
B. Rotor speed of the machine is constant
C. Mechanical input remains constant.
D. All of these

Options :

1. A
2. B
3. C
4. D

Question Number : 6 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

For which among the following cases is the equal area criterion of stability used?

A. One machine and infinite bus bar
B. No load on bus bar
C. Many machines and infinite bus bar
D. All of these

Options :

1. A
2. B
3. C
4. D

Question Number : 7 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which stability information is obtained from the equal area criterion?

A. Absolute stability
B. Transient stability
C. Steady state stability
D. Both (b) and (c)

Options :
1. A
2. B
3. C
4. D

Question Number : 8 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Under what condition is the system stable under equal area criterion?

A. The area under the curve $P_a - \delta$ curve must increase to ∞.
B. The area under the curve $P_a - \delta$ curve must become equal to 1
C. The area under the curve $P_a - \delta$ curve must reduce to zero.
D. None of these

Options :
1. A
2. B
3. C
4. D

Question Number : 9 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Why are the series capacitors used?

A. Improve the voltage
B. Reduce the fault level
C. Compensate for line inductive reactance and improve the stability of the power system.
D. Improves the power factor

Options :
1. A
2. B
3. C
4. D

Question Number : 10 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which among the following methods are used to improve steady state stability?

      A. Reducing the reactance between the transmission and receiving points.
      B. By using bundled conductors.
      C. By increasing the excitation of generator or motor or both.
      D. All of these

Options :

1. A

2. B

3. C

4. D

Question Number : 11 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the range of 'δ' for stable operation?

      A. $0° < \delta < 45°$
      B. $45° < \delta < 90°$
      C. $0° < \delta < 90°$
      D. $0° < \delta < 120°$

Options :

1. A

2. B

3. C

4. D

Question Number : 12 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

At what value of 'δ' the maximum power transfer takes place?

      A. $45°$
      B. $90°$
      C. $120°$
      D. $180°$

Options :

1. A

2. B

3. C

4. D

What is power angle equation of synchronous machines?

A. An equation between electrical power generated to the angular displacement
of the rotor
B. An equation between mechanical power generated to the angular displacement
of the rotor
C. An equation between electrical power generated to the angular displacement
of stator windings
D. An equation between mechanical power generated to the angular displacement
of stator windings

Options :

1. A

2. B

3. C

4. D

What information does the swing curve provide?

A. Stability of the system.
B. Performance of the machine
C. The rotor performance
D. All of these

Options :

1. A

2. B

3. C

4. D

Which among the following methods are highly accurate?

A. Gauss Seidel method
B. Newton Raphson method
C. Fast decoupled low flow method
D. All of these

Options :

1. A

2. B

3. C

4. D

**Question Number : 16 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**
Correct Marks : 1 Wrong Marks : 0

For what studies are the FDLF method used?

A. Optimisation studies
B. Multiple load flow studies
C. Small size systems
D. Both (a) and (b)

Options :

1. A

2. B

3. C

4. D

**Question Number : 17 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**
Correct Marks : 1 Wrong Marks : 0

What is the result of frequency instability?

A. Voltage collapse
B. Frequency swings
C. Tripping of generating units
D. Both (b) and (c)

Options :

1. A

2. B

3. C

4. D

**Question Number : 18 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**
Correct Marks : 1 Wrong Marks : 0

Which among the following phenomenon is generally associated with voltage stability?

A. Temporary load reduction
B. Voltage is reduced
C. Voltage collapses
D. All of these

Options :

1. A
2. B
3. C
4. D

Question Number : 19 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the main cause of voltage instability?
A. Generators
B. Transformers
C. Loads
D. Line losses

Options :
1. A
2. B
3. C
4. D

Question Number : 20 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is voltage stability?
A. To maintain steady voltages at all the buses after the occurrence of fault.
B. To maintain steady voltages at all the buses before the occurrence of fault.
C. To maintain the system frequency after the severe disturbances
D. All of these

Options :
1. A
2. B
3. C
4. D

Question Number : 21 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

On what factors does the transient stability depend on?
A. Initial operating state
B. Severity of disturbances
C. Voltage instability
D. Both (a) and (b)

Options :
1. A
2. B

3. C

4. D

**Question Number : 22 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**

Correct Marks : 1 Wrong Marks : 0

What is / are the cause(s) for transient disturbance?
     A. Sudden load changes
     B. Faults in the power system
     C. Switching operations
     D. All of these

Options :

1. A

2. B

3. C

4. D

**Question Number : 23 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**

Correct Marks : 1 Wrong Marks : 0

By using which component can the transient stability limit of a power system be
improved?
     A. Series resistance
     B. Series capacitor
     C. Series inductor
     D. Shunt resistance

Options :

1. A

2. B

3. C

4. D

**Question Number : 24 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**

Correct Marks : 1 Wrong Marks : 0

What is transient stability limit?
     A. The maximum flow of power through a particular point in the power system
        without loss of stability when small disturbances occur.
     B. The maximum power flow possible through a particular component connected
        in the power system.
     C. The maximum flow of power through a particular point in the power system
        without loss of stability when large and sudden disturbances occur
     D. All of these

Options :

1. A

2. B

3. C

4. D

Question Number : 25 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which among the following methods is used for improving the system stability?
A. Increasing the system voltage
B. Reducing the transfer reactance
C. Using high speed circuit breaker
D. All of these

Options :

1. A

2. B

3. C

4. D

Question Number : 26 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which among these is a classification of power system stability?
A. Frequency stability
B. Voltage stability
C. Rotor angle stability
D. All of these

Options :

1. A

2. B

3. C

4. D

Question Number : 27 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The stability of the power system is not affected by which among these?
A. Generator reactance
B. Line losses
C. Excitation of generators
D. All of these

Options :

1. A

2. B

3. C

4. D

**Question Number : 28 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**
Correct Marks : 1 Wrong Marks : 0

What is the main drawback in NR method?
    A. Slow to converge
    B. A large memory allocation is required to store the jacobian matrix
    C. The number of iterations is more
    D. All of these

Options :
1. A
2. B
3. C
4. D

**Question Number : 29 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**
Correct Marks : 1 Wrong Marks : 0

Which types of equations are solved using Newton Raphson method?
    A. Non-linear differential equations
    B. Linear differential equations
    C. Non-linear algebraic equations
    D. Both (a) and (b)

Options :
1. A
2. B
3. C
4. D

**Question Number : 30 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**
Correct Marks : 1 Wrong Marks : 0

Which among the following buses constitute the maximum number in a power system?
    A. Slack bus
    B. P Q bus
    C. P V bus
    D. All of these

Options :
1. A
2. B
3. C
4. D

Question Number : 31 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which among these quantities are to be determined in slack bus?
- A. P and Q
- B. Q and |V|
- C. |V| and δ
- D. Q and δ

Options :

1. A

2. B

3. C

4. D

Question Number : 32 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What are the types of unsymmetrical faults?
- A. Single line to ground fault
- B. Double line to ground fault
- C. Line to line fault
- D. All of these

Options :

1. A

2. B

3. C

4. D

Question Number : 33 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the value of the zero sequence impedance?
- A. $Z_0 = Z$
- B. $Z_0 = Z + 2 Z_n$
- C. $Z_0 = Z + 3 Z_n$
- D. $Z_0 = 0$

Options :

1. A

2. B

3. C

4. D

Question Number : 34 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Phase shift of symmetrical components happens in which among the following?
    A. Delta - delta
    B. Star – delta
    C. Delta – star
    D. Both (b) and (c)

Options :

1. A

2. B

3. C

4. D

Question Number : 35 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the value of the zero sequence current?
    A. 3 times the current in the neutral wire
    B. 1 / 3 times the current in the neutral wire
    C. $\sqrt{3}$ times the current in the neutral wire
    D. Equal to the current in the neutral wire

Options :

1. A

2. B

3. C

4. D

Question Number : 36 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The positive sequence current is always equal to _____.
    A. Always zero
    B. 1/3 of the negative sequence current
    C. Negative sequence current
    D. 3 times the negative sequence current

Options :

1. A

2. B

3. C

4. D

Question Number : 37 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A balanced three phase system consists of _____.

      A. Zero sequence currents only

      B. Positive sequence currents only

      C. Positive, negative and zero sequence currents

      D. Only negative sequence currents

Options :

1. A

2. B

3. C

4. D

Question Number : 38 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which among the following quantities are to be determined in voltage controlled bus?

      A. P and Q

      B. Q and $|V|$

      C. $|V|$ and δ

      D. Q and δ

Options :

1. A

2. B

3. C

4. D

Question Number : 39 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which among the following quantities are specified at the generator bus?

      A. P and Q

      B. P and $|V|$

      C. Q and $|V|$

      D. P and δ

Options :

1. A

2. B

3. C

4. D

Question Number : 40 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which among the following quantities are specified at the load bus?
	A. P and Q
	B. P and |V|
	C. Q and |V|
	D. P and δ

Options :

1. A

2. B

3. C

4. D

Question Number : 41 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Why are load flow studies carried out?
	A. To study of stability of the system
	B. For fault calculations
	C. For planning the power system
	D. All of these

Options :

1. A

2. B

3. C

4. D

Question Number : 42 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Why are series reactors used?
	A. Improve the transmission efficiency
	B. Improve the power factor of the power system
	C. To bring down the fault level with in the capacity of the switchgear instrument
	D. All of these

Options :

1. A

2. B

3. C

4. D

Question Number : 43 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

One of the challenges in today's power system is

A. Integration of Renewable Energy Sources into the Main Grid
B. Conventional Energy sources are getting added
C. decrease in global power demand
D. All the above

Options :

1. A
2. B
3. C
4. D

Question Number : 44 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

What is the main impact of changes in Grid?

A. Increase in power quality
B. Overstressing of existing Infrastructure
C. Improvement in Grid Stability
D. None of the above

Options :

1. A
2. B
3. C
4. D

Question Number : 45 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

What are major causes of Transient instability?

A. transmission system faults
B. loss of generating units
C. sudden load changes
D. All of the above

Options :

1. A
2. B
3. C
4. D

Which of the following is a solution for avoiding blackouts?

A. FACTS Devices
B. Effective Data Communication System
C. Both a and b
D. None of the above

Options :

1. A
2. B
3. C
4. D

In which year did India face biggest blackout?

A. 2010
B. 2011
C. 2012
D. 2013

Options :

1. A
2. B
3. C
4. D

Main goal of Simulation is to
A. Reduce risk
B. Reduce delay
C. Reduce cost
D. All of above

Options :

1. A
2. B
3. C
4. D

Question Number : 49 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

In model in the loop,
A. Both controller and plant are in simulation
B. Plant is simulated and controller is real
C. Controller is simulated and plant is real
D. None of the above

Options :

1. A

2. B

3. C

4. D

Question Number : 50 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

In rapid control prototyping,
A. Both controller and plant are in simulation
B. Plant is simulated and controller is real
C. Controller is simulated and plant is real
D. None of the above

Options :

1. A

2. B

3. C

4. D

Question Number : 51 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The smart Grid sensing and control infrastructure comprise of,

A. DG, Combined heat and power (CHP), PHEVs, PV cells and WT

B. Sensors, intelligent electronic devices (IEDs) and smart meters

C. μwave, IR, PLCC, GSM and CDMA

D. High-end servers, middleware and data-storage unit

Options :

1. A

2. B

3. C

4. D

**Question Number : 52 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**

Correct Marks : 1 Wrong Marks : 0

For bidirectional power flow between the battery and dc PCC _____ converter is
preferred.

A. Buck converter

B. Boost Converter

C. Buck- boost Converter

D. Interleaved boost Converter

Options :

1. A

2. B

3. C

4. D

**Question Number : 53 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**

Correct Marks : 1 Wrong Marks : 0

The voltage distortion limit for bus voltage at PCC <=69kV is,

A. Individual distortion <= 1.5% , Total Harmonic distortion <= 2.5%

B. Individual distortion <= 1% , Total Harmonic distortion <= 1.5%

C. Individual distortion <= 1.5% , Total Harmonic distortion <= 5%

D. Individual distortion <= 3% , Total Harmonic distortion <= 5%

Options :

1. A

2. B

3. C

4. D

**Question Number : 54 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical**

Correct Marks : 1 Wrong Marks : 0

In Fourier Series Analysis for Harmonic Decomposition a_0 stands for

A. Fundamental component

B. Harmonic component

C. dc component

D. ac component

Options :

1. A

2. B

3. C

4. D

Question Number : 55 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

State of charge (SoC) for the battery pack in a electric vehicle is given by

A. 0% = empty; 100% = full

B. 100% = empty; 0% = full

C. 0% = empty; 80% = full

D. 80% = empty; 0% = full

Options :

1. A

2. B

3. C

4. D

Question Number : 56 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A 1Ah battery with 2C discharging can last for,

A. 1 hour and discharge fully

B. ½ hour and discharge fully

C. 2 hour and discharge fully

D. 1½ hour and discharge fully

Options :

1. A
2. B
3. C
4. D

Question Number : 57 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The daily energy consumption of the house hold is 3200Wh. Assume, 2% cable Loss, Inverter η=93% . Determine the Inverter Input and output Energy.

A. 3510.75 Wh, 3265 Wh

B. 3440.86 Wh, 3511.08 Wh

C. 3440.86 Wh, 3265 Wh

D. 3510.75 Wh, 3511.08 Wh

Options :

1. A
2. B
3. C
4. D

Question Number : 58 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The daily energy consumption of the house hold is 3200Wh. Assume, 2% cable Loss, Inverter η=93% , Battery Bank Depth of Discharge(DoD) is 50%, Days of Autonomy(DoA) is 2 days, Charge Controller η=97%, market available battery 120 Ah, 12 V and battery bank efficiency as 70%. Determine the final capacity of battery with system voltage of 48V and the required number of battery strings.

A. 299Ah, 2 strings

B. 299Ah, 3 strings

C. 460Ah, 2 strings

D. 460Ah, 3 strings

Options :

1. A
2. B
3. C
4. D

Question Number : 59 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The daily energy consumption of the house hold is 3200Wh. Assume, 2% cable Loss, Inverter η=93% , Battery Bank Depth of Discharge(DoD) is 50%, Days of Autonomy(DoA) is 2 days, Charge Controller η=97%, market available battery 120 Ah, 12 V, battery bank efficiency as 70% , peak sun hours for a location as 5 h, Module Derate Factor is 34.75% and aging factor 90%. Determine the number of modules of 250W required.

A. 19 modules

B. 8 modules

C. 22 modules

D. 6 modules

Options :

1. A
2. B
3. C
4. D

Question Number : 60 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The daily energy consumption of the house hold is 3200Wh. Assume, 2% cable Loss, Inverter η=93% , Battery Bank Depth of Discharge(DoD) is 50%, Days of Autonomy(DoA) is 2 days, Charge Controller η=97%, market available battery 120 Ah, 12 V, battery bank efficiency as 70%| , peak sun hours for a location as 5 h, Module Derate Factor is 34.75% and aging factor 90%. Determine the charge controller rating.

A. 24V, 50A

B. 48V, 25A

C. 48V, 50A

D. 24V, 25A

Options :

1. A

2. B

3. C

4. D

Question Number : 61 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Smart grid back bone is…………... ,which connect different components to a smart grid, and provide two way communication.

A. Smart Meter

B. ICT

C. SCADA

D. DCS

Options :

1. A

2. B

3. C

4. D

Question Number : 62 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Denial of Service (DoS) attack classified under

A. Component-wise

B. Protocol-wise
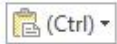
C. Network- Wise

D. Topology-wise

Options :

1. A
2. B
3. C
4. D

Question Number : 63 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which attack method determine significant difference in expected and observed data

A. Generalized likelihood ratio Detector

B. Chi-Square Test

C. Lightweight Message Authentication

D. Supervised Learning Algorithms

Options :

1. A
2. B
3. C
4. D

Question Number : 64 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

How many Domains defined in cyber security architecture model as per NISTIR 7628

A. 3

B. 5

C. 7

D. 9

Options :

1. A
2. B
3. C
4. D

Question Number : 65 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Logical Interface category named "Advanced metering infrastructure (AMI) "has CIA priority is

A. HHL

B. LLH

C. HHH

D. MHL

Options :

1. A
2. B
3. C
4. D

Question Number : 66 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

_____ encryption standards is designed to prevent unauthorized access or damage to computers using wireless networks

A. IEEE 802.1X

B. DNP3

C. IEC 27001

D. ISO 31000

Options :

1. A
2. B
3. C
4. D

Question Number : 67 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Components of Cyber Security Strategy are

    A. Identify, Protect, Analyse, Recover

    B. Identify, Analyse, Detect, Recover

    C. Prevention, Detection, Response, Recovery

    D. Prevention, Analyse, Detect, Recover

Options :

1. A
2. B
3. C
4. D

Question Number : 68 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

How many domains are defined by NIST Smart Grid Framework?

    A. 5
    B. 4
    C. 6
    D. 7

Options :

1. A
2. B
3. C
4. D

Question Number : 69 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If a smart meter provides 15 minutes interval data, how many record you will get in a week?

    A. 96 reads
    B. 672 reads
    C. 192 reads
    D. 48 reads

Options :

1. A
2. B

3. C

4. D

What is the sampling rate of Phasor measurement units (PMUs)?

A. 60 Samples per second

B. 4 Samples per second

C. 4-6 Samples per second

D. None of the above

Options :

1. A

2. B

3. C

4. D

How can you define a notification in a Budget Assistant?

A. Utility calculates the usage and sends out notification

B. Users can define their threshold for notification

C. Whenever there is a Critical Peak, utility sends notification?

D. None of the above

Options :

1. A

2. B

3. C

4. D

What is WASA?

A. Wide Area State Alert – Ability to receive alerts?

B. Wide Area Situational Awareness – ability to know the real time situation of the grid

C. World Active Society for Awareness

D. Wide Active State Awareness

Options :

1. A

2. B

3. C

4. D

Question Number : 73 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What are the two main problems in Power System State Estimation (PSEE)?

A. Big data

B. Bad data & Dimensionality reduction

C. Dimensionality reduction

D. Numeric data

Options :

1. A

2. B

3. C

4. D

Question Number : 74 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What are the four different data classes as explained in the synergy model

A. Waveforms, Telemetry, Event Message, Usage Data

B. Waveforms, Grid analytics, Usage Data, Demand Response

C. Waveforms, Telemetry, Demand Response, Usage Data

D. Waveforms, Grid analytics, Demand Response, Telemetry

Options :

1. A

2. B

3. C

4. D

Question Number : 75 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following attribute should be used while checking for type combination input and output ?

A. .types

B. .type

C. .classtype

D. .dtype

Options :

1. A
2. B
3. C
4. D

Question Number : 76 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

You have built a machine learning model which you wish to freeze now and use later. Which of the following command can perform this task for you?

A. push(model, "file")
B. save(model, "file")
C. dump(model, "file")
D. freeze(model, "file")

Options :

1. A
2. B
3. C
4. D

Question Number : 77 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Machine learning is

A. The autonomous acquisition of knowledge through the use of computer programs

B. The autonomous acquisition of knowledge through the use of manual programs

C. The selective acquisition of knowledge through the use of computer programs

D. The selective acquisition of knowledge through the use of manual programs

Options :

1. A
2. B
3. C
4. D

Question Number : 78 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following evaluation metrics can not be applied in case of logistic regression output to compare with target?

A. AUC-ROC
B. Accuracy
C. Logloss
D. Mean-Squared-Error

Options :

1. A
2. B
3. C
4. D

Question Number : 79 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which of the following options is/are true for K-fold cross-validation?

1. Increase in K will result in higher time required to cross validate the result.
2. Higher values of K will result in higher confidence on the cross-validation result as compared to lower value of K.
3. If K=N, then it is called Leave one out cross validation, where N is the number of observations.

A. 1 and 2
B. 2 and 3
C. 1 and 3
D. 1,2 and 3

Options :

1. A
2. B
3. C
4. D

Question Number : 80 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Determine which is the best approach for each problem.

    a. supervised learning

    b. unsupervised clustering

1. Develop a profile for credit card customers likely to carry an average monthly balance   of more than $1000.00.

2. Determine the characteristics of a successful used car salesperson.

3. What attribute similarities group customers holding one or several insurance policies?

4. Do meaningful attribute relationships exist in a database containing information about credit card customers?

5. Determine whether a credit card transaction is valid or fraudulent.

    A. a a a b a

    B. b b a a b

    C. b b b a b

    D. a a a a a

Options :

1. A

2. B

3. C

4. D

Question Number : 81 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which statement is true about prediction problems?

A. The output attribute must be categorical.

B. The output attribute must be numeric.

C. The resultant model is designed to determine future outcomes.

D. The resultant model is designed to classify current behaviour.

Options :

1. A

2. B

3. C

4. D

Question Number : 82 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Data used to optimize the parameter settings of a supervised learner model.

A. training

B. test

C. verification

D. validation

Options :

1. A

2. B

3. C

4. D

Question Number : 83 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Simple regression assumes a _____ relationship between the input attribute and output attribute.

A. linear

B. quadratic

C. reciprocal

D. inverse

Options :

1. A

2. B

3. C

4. D

Question Number : 84 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

AMI means

A. Automated Metering Instrument

B. Alternate Metering Instrument

C. Advanced Metering Infrastructure

D. Advanced Metering Instrument

Options :

1. A

2. B

3. C

4. D

Question Number : 85 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1   Wrong Marks : 0

AMI supports communication as

A. Two-Way
B. Single -Way
C. Multi-Way
D. None of above

Options :

1. A
2. B
3. C
4. D

Question Number : 86   Question Type : MCQ   Option Shuffling : No   Display Question Number : Yes   Single Line Question Option : No   Option Orientation : Vertical
Correct Marks : 1   Wrong Marks : 0

In low density area preferred Communication interface for Smart meter is

A. Wireless Communication
B. Wired Communication
C. Both A & B
D. None of Above

Options :

1. A
2. B
3. C
4. D

Question Number : 87   Question Type : MCQ   Option Shuffling : No   Display Question Number : Yes   Single Line Question Option : No   Option Orientation : Vertical
Correct Marks : 1   Wrong Marks : 0

NAN in smart grid stands for

A. Near a Network
B. Near me Area Network
C. Network of Network
D. Near Arena Network

Options :

1. A
2. B
3. C
4. D

Which Communication technology having maximum data range

A. Bluetooth
B. RF
C. LoRaWAN
D. GSM/NB IoT

Options :

1. A
2. B
3. C
4. D

Which protocol does not use publisher - subscriber communication pattern

A. CoAP
B. HTTP
C. MQTT
D. AMQP

Options :

1. A
2. B
3. C
4. D

In AMI, MDMS stands for

A. Master data management system

B. Meter data management system

C. Meter data migration system

D. Mobile data metering system

Options :

1. A
2. B
3. C
4. D

Question Number : 91 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is a blockchain?
A. Cryptocurrency
B. Distributed ledger on peer to peer network
C. Exchange
D. Centralized ledger

Options :
1. A
2. B
3. C
4. D

Question Number : 92 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is Proof of Stake?

A. A transaction and block verification protocol

B. A certificate needed to use the blockchain

C. A password needed to access an exchange

D. How private keys are made

Options :
1. A
2. B
3. C
4. D

Question Number : 93 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The computers that find new blocks are called

A. Miners

B. Accountants

C. Associates

D. Verifiers

Options :

1. A
2. B
3. C
4. D

Question Number : 94 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Blockchain is suitable technology to use in business network when intended to use

A. Between two organizations

B. Between multiple organizations

C. The technology is still nascent to use

D. None of these

Options :

1. A
2. B
3. C
4. D

Question Number : 95 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option :
No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

How is record keeping in ledgers different in Blockchain from traditional methods?

A. Each business partner shares the same ledger
B. Each business partner has different ledger
C. Business partners have different ledger synced to each other than random times
D. None of these

Options :

1. A
2. B
3. C
4. D

Question Number : 96 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Channel are used in Hyperledger fabric for

A. Setting network

B. Establishing communication between network partners in a business

C. Encryption of data

E. All of these

Options :

1. A
2. B
3. C
4. D

Question Number : 97 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Blockchain is best suited to

A. Multi-party business network

B. Single party network

C. Within One department

D. Within an organization

Options :

1. A
2. B
3. C
4. D

Question Number : 98 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is an open source Blockchain platform

A. Hyperledger

B. Coinlist

C. Fortran

D. GoLang

Options :
1. A
2. B
3. C
4. D

Is Blockchain the same as Cryptocurrency like Bitcoin

A. Yes
B. No
C. Not related
D. They are synonymous

Options :
1. A
2. B
3. C
4. D

Is the Blockchain technology making difference to the way business have been done

over decades.

A. Yes, in a positive way

B. No, not in positive way

C. Not making difference

D. The technology is still in research

Options :
1. A

2. B

3. C

4. D