PSN College of Engineering and Technology
An Autonomous Institution, Affiliated to Anna University
Approved by AICTE, Accredited by NAAC with A+ Grade

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING





Regulation - 2018

Multiple Choice Questions

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Course Code: EE670214

Course Name: Power System operation and control



Institute Vision and Mission

VISION

To provide an academic environment to learn, work and do research enabling the student's faces challenges in life with strong ethical values.

MISSION

- To achieve greater heights of excellence in technical knowledge and skill development through innovative teaching and learning practices.
- To develop the infrastructure to meet the demands of technological revolution.
- To improve and foster research in all dimensions for betterment of society.
- To develop individual competencies to enhance employability and entrepreneurship in students.
- To instil higher standards of discipline among students, inculcating ethical and moral values for societal harmony and peace.

Department Vision and Mission

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

VISION

The department aims at imparting high quality education to Electrical and Electronics Engineering students with active learning, critical thinking with ethical values to meet the global challenges.

MISSION

- To provide advanced knowledge and skills for Learning under congenial environment for global placement and entrepreneurship.
- To stimulate the process of critical thinking and solving the problems with focus on research capabilities.
- To enhance professional ethics and standards to meet the demands of society

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

PROGRAM EDUCATIONAL OBJECTIVES

S. No	Objective	PEOs
PEO1	Basic Knowledge	To impart fundamental knowledge in the field of Electrical and Electronics Engineering and enabling them to occupy responsible positions in their career.
PEO2	Problem Solving Skill	To enhance the analytical skills of the students by learning process and making themselves to identify, apprehend and solve problems using modern tools.
PEO3	Societal Response	To make use of their technical expertise for Socially beneficial activities and transform them in responsible positions.

PROGRAM OUTCOMES

PO'S NO	KNOWLEDGE	STATEMENT	APPLIANCE
1	Engineering Knowledge	Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.	Theory / Practical / Project work
2	Problem Analysis	Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	Theory / Practical / Projects
3	Design/ Development of Solutions	Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.	Theory / Practical / Projects
4	Conduct Investigations of Complex Problems	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.	Theory / Practical
5	Modern Tool usage	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.	Theory / Practical / Project work
6	The Engineer and Society	Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.	Theory / Industrial visit / Inplant training
7	Environment and Sustainability	Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.	Theory / Industrial Visit / In plant Training
8	Ethics	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.	Theory / Industrial visit / Inplant training
9	Individual and Team Work	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.	Projects
10	Communication	Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	Projects / Seminar / Mini Project
11	Project Management and Finance	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	Projects
12	Life-long Learning	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	Projects / Higher Studies

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO 1: Ability to work professionally in the field of Power System, Control system and Power Electronics with the knowledge of operation and Maintenance.

PSO 2: Ability to solve complex real time problems in Electrical and Electronics Engineering field using modern tools.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Branch: B.E	Regulation: 2022	Year / Semester: IV/7
Course Code: **EE670214**	Course Name: **POWER SYSTEM OPERATION AND CONTROL**	

UNIT-1

A higher load factor means
a) Cost/unit is less. b) Less variation in load.
c) Generation is more. d) All of these

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1. What is a load factor?

a. The ratio of average to maximum demand.

b. The ratio of maximum demand to average load.

c. The product of maximum demand and average load.

d. The ratio of average load to the plant capacity.

Answer:A

2. What is the load factor of a power plant?

a. Greater than unity.

b. Less than unity.

c. Always more than unity.

d. Normally more than unity

Answer:B

3. The load factor plays a key role in determining which among the following?

a. Plant capacity.

b. Overall cost per unit generated.

c. Overall demand.

d. Both (a) and (c).

Answer:B

4. An industrial consumer has a load pattern of 2000 kW 0.8 lag for 12 hours and 1000 kW unity power factor for 12 hours. What is the load factor?

a. 0.5

b. 0.55

c. 0.6

d. 0.75

Answer:D

5. What is the plant capacity factor?

a. A ratio of kWh generated to the product of plant capacity and the number of hours for which the plant is in operation.

b. The ratio of sum of individual maximum demands to the maximum demand on power stations.

c. The ratio of actual energy produced to the maximum possible energy.

d. The ratio of maximum demand on the power station to the connected load.
Answer:C

6. Capacity factor will be very low when the power plant

a. Is operated as base load plant.
b. Is operated for supplying base load as well as the peak loads.
c. Is operated in emergency only.
d. Is under maintainance.
Answer:C

7. A thermal generating station has a installed capacity of 15 MW and supplies a daily load of 10 Mw for 12 hours and 5 MW for remaining 12 hours. The plant capacity factor for this station is

a. 1
b. 0.75
c. 0.67
d. 0.5
Answer:D
8. In a power station, the cost of generation of power reduces most effectively when

a. Diversity factor alone increases.
b. Both diversity factor and load factor increases.
c. Only load factor increases.
d. Both diversity factor and load factor decreases.
Answer:B

9.What is the diversity factor?

a. A ratio of kWh generated to the product of plant capacity and the number of hours for which the plant is in operation.

b. The ratio of sum of individual maximum demands to the maximum demand on power stations.

c. The ratio of actual energy produced to the maximum possible energy.

d. The ratio of maximum demand on the power station to the connected load.

Answer:B

10. What is operating value of diversity factor?

a. Greater than unity.
b. Less than unity.
c. Always more than unity.
d. Normally more than unity.
Answer:A
11. **Diversity factor is helpful in computing which of the following factors?**

a. Plant capacity.
b. Average load.
c. Units generated (kWh)
d. Peak demand.
Answer:A

12. **A large diversity factor of the load in a power system**

a. Reduces the installation cost.
b. Increases the installation cost.
c. Does not affect the installation cost.
d. None of the above.
Answer:A

13. **What is the result of the product of diversity factor and maximum demand?**

a. Average demand
b. Sum of consumers maximum demand
c. Installed capacity.
d. Generated power.

Answer:B
14. Maximum demand on the power system is

a. Sum of the maximum demands of all its consumers.
b. Greatest average load in a specified time.
c. Peak value of load in a specified time.
d. All of the above.
Answer:B

15. **What is demand factor?**

a. Average load to maximum demand.
b. Maximum demand to connected load.
c. Connected load to maximum demand.
d. Maximum demand to average load.
Answer:B
16. What is the value of demand factor?

a. Greater than unity.
b. Less than unity.
c. Always more than unity.
d. Normally more than unity.
Answer:B

17. **What is connected load?**

a. Installed electrical load in the premises of the consumer.
b. Maximum load a consumer draws.
c. Load drawn by a consumer at any instant.
d. None of the above.
Answer:A
18. The power system experiences peak demand from

a. Midnight to 8 A.M
b. 8 A.M to 2 P.M
c. 2 P.M to 6 P.M
d. 6 P.M to 10 P.M
Answer:D
19. The maximum demand on the power system is 100 MW. If the annual load factor is 40%. Calculate the total energy generated in a year.

a. $3761 * 10^5$ kWh
b. $4174 * 10^5$ kWh
c. $3504 * 10^5$ kWh
d. $3500 * 10^5$ kWh
Answer:C
20. The power demand can be estimated approximately by

a. Load survey method.
b. Mathematical method.
c. Statistical method.
d. Economic parameters.
Answer:C
21. A generating station has a connected load of 55 MW and maximum demand of 20 MW. What is the demand factor?

a. 0.4785
b. 0.3636
c. 2.75
d. 1100
Answer:B
22. Determine the average demand of a plant if its load factor and maximum demand are 0.60 and 30 MW.

a. 20 MW
b. 18 MW
c. 50 MW
d. 13 MW
Answer:B

23. **Utilisation factor is defined as the ratio of**

a. Average demand to the rated capacity of the plant.
b. Maximum demand on the power plant to the rated capacity of the power plant.
c. Rated capacity of the power plant to the maximum demand.
d. None of these.

Answer:B

24. **A consumer consumes 400 kWh per day at a load factor of 0.3. If he increases the load factor to 0.6 without any increase in maximum demand. What is the consumption of energy in kWh?**

a. 800 kWh
b. 650 kWh
c. 1125 kWh
d. 425 kWh
Answer:A

25. The yearly load duration curve of a power plant is a straight line. The maximum load is 850 MW and minimum load is 650 MW. The capacity of the plant is 950 MW. What is the capacity factor and the utilization factor?

a. 0.89, 0.78
b. 0.83, 0.65
c. 0.78, 0.89
d. 0.65, 0.83
Answer:C

26. Interconnected systems have the advantage of

a. Reduced reserve plant capacity, capital cost per kW and economy in operation.
b. Improved load factor, diversity factor and operation efficiency and increased reliability of supply.
c. All of the above.
d. None of the above.
Answer:C

27. **Major share of power generated in India is through which means?**

a. Hydroelectric power plants.
b. Nuclear power plants.
c. Thermal power plants.
d. Gas turbine power plants.
Answer:C

28. **What is the modern trend in electric power generation?**

a. To have a large number of small size thermal plants located at different places.
b. To have large size thermal plants near load centre.
c. To have large size thermal plants located near coal fields.
d. None of the above.
Answer:C

29. **Which among the following plants have the least operating cost?**

a. Steam plants
b. Hydro plants
c. Nuclear plants
d. Diesel plants.
Answer:B

30. What are the essential requirements for power plants to be operated as peak load plants?

a. Capability of quick start, synchronisation and taking up of system load.
b. Quick response to load variations.
c. Low capital cost.
d. All of these.
Answer:D

UNIT-2

1. **In a steam power station, electric power is generated at what power?**

a. 440 V
b. 1.1 kV
c. 11 kV
d. 33 Kv

Answer:C

2. Annual operating cost of a generating plant consists of

a. Fixed charges.
b. Semi fixed charges.
c. Operating or running charges.
d. All of these.
Answer:D

3. For a nuclear plant, what is its useful life?

a. 10 years.
b. 30 years
c. 100 years
d. 60 years
Answer:B

4. What happens in a load shedding?

a. System voltage is reduced.
b. System frequency is reduced.
c. System loads are switched off.
d. System power factor is changed.

Answer:C
5. Why is load shedding done?

a. Reducing peak demand on the system.
b. Repairing of machines.
c. Power factor improvement.
d. Efficient operation of equipment.

Answer:A

6. Generators for the base loads plants are usually designed for maximum efficiency around

a. 20% overload.
b. Full load
c. 75% full load.
d. None of these.

Answer:B

7. What all components are included in the annual operating cost?

a. Fuel, maintenance cost and labour.
b. Interest, taxes, insurance and depreciation.
c. Both (a) and (b)
d. None of these.

Answer:A

8. What does the annual fixed cost include?

a. Fuel, maintenance cost and labour.
b. Interest, taxes, insurance and depreciation.
c. Both (a) and (b)
d. None of these.
Answer:B

9. The capital cost of a power plant depends on?

a. Total installed capacity only.
b. Total number of units only.
c. Both installed capacity and number of units.
d. Neither (a) or (b)
Answer:C

10. What is fixed charges?

a. Cost of investment irrespective of energy generated.
b. Operating cost of the fuel along with cost of investment plant.
c. Operating cost only.
d. None of the above.

Answer:A

11. **What is meant by semi fixed charges?**

a. It is the cost which is independent of maximum demands and units generated.
b. It is the cost which depends only on the units generated.
c. It is the cost which depends upon the maximum demand but it is independent of units generated.
d. None of these.

Answer:C

12. For economic, the generator with highest positive incremental transmission loss will operate at

a) The lowest positive incremental cost of production.
b) The lowest negative incremental cost of production.
c) The highest positive incremental cost of production.
d) None of the above

Answer:A

13. Q.
What is the objective of the economic dispatch problem?

A.The objective of economic dispatch problem is to maintain the operating cost of active power generation.

B.The objective of economic dispatch problem is to maximize the operating cost of active power generation.

C.The objective of economic dispatch problem is to reduce the operating cost of active power generation.

D.The objective of economic dispatch problem is to minimize the operating cost of active power generation.

Answer:D

14. Economic distribution of loads between plants also know as _____.

A. unit commitment

B. economic dispatch

C. coordination equation

D. Lagrange's method

Answer:B

15. The rate of change of fuel cost with active power generation is called_____.

A.incremental fuel-cost

B.participation rate

C.incremental rate

D.base point
Answer:A

16. Define minimum up time.

A. Once the unit is decommitted, there is a minimum time before it can be recommitted.

B. Once the unit is decommitted, there is a maximum time before it can be recommitted.

C. Once the unit is running, it should be turned off immediately.

D. Once the unit is running, it should not be turned off immediately.

Answer:D

17. Which statement is not true about Unit Commitment?

A. We can't simply commit enough unit to cover the maximum system load and leave them running all the time because it may be quite expensive to run too many generating units when the load is not large enough.

B. Unit Commitment plans for the best set of units to be available to supply the predicted or forecasted load of the system over a future time period.

C. The problem of finding the order in which the units are to be brought in and the order in which the units are to be shut down over a period of time, say one day, so the total operating cost involved on that day is maximum, is known as Unit Commitment Problem (UCP).
Answer:C

18. In power station practice "spinning reserve" is.....

A. reserve generating capacity that is in operation but not in service

B. reserve generating capacity that is connected to bus and ready to take the load

C. reserve generating capacity that is available for service but not in operation

D .capacity of the part of the plant that remains under maintenance.

Answer:B

19. What are the thermal unit constraints?

A. Minimum up time

B. Maximum down time
C. Minimum down time
D. Crew constraints
Answer:A,,C,D

20. The annual depreciation reserve depends on

a. Capital cost only.
b. Salvage value only.
c. On any method of calculation of depreciation factor.
d. All of these.

Answer:D

21. What is tariff?

a. The rate at which electrical energy is produced in the plant.
b. The rate at which electrical energy is supplied to the consumers.
c. Both (a) and (b).
d. None of these.
Answer:B

22. Flat rate tariff is charged on what basis?

a. Connected load.
b. Units consumed.
c. Maximum demand.
d. Both (a) and (b)
Answer:B

23. **Domestic consumers are charged?**

a. Flat demand tariff.
b. Block rate tariff.
c. Flat rate tariff.
d. Off peak tariff.
Answer:B

24. **Which tariff is used by the small commercial consumers?**

a. Maximum demand tariff.
b. Block rate tariff.
c. Three part tariff.
d. Two part tariff.
Answer:B

25. **Block rate tariff, where energy charge decreases with the increase in energy consumption,**

a. Encourages the consumers for more consumption.
b. Discourages the consumers for more consumption.
c. Encourages the consumers to restrict their demand.
d. Encourages the consumers to improve the power factor.

Answer:A

26. Two part tariff is charged on what basis?

a. Connected load
b. Units consumed.
c. Maximum demand.
d. Both (b) and (c).

Answer:D

27. Fixed charge is dependent on what factor?

a. Energy consumption
b. Maximum demand
c. Peak load demand
d. All of the above.
Answer:B

28. **What is the difference between two part tariff and maximum demand tariff?**

a. A separate meter is used.
b. A separate maximum demand meter is used.
c. Semi fixed charges are also included.
d. All of these.
Answer:B

29. **This tariff is applied for which kind of consumers?**

a. Big consumers.
b. Small consumers.
c. Residential consumers.
d. All of these.

Answer:A

30. Why is this tariff not applicable to domestic consumers?

a. Low maximum demand.
b. Low load factor.
c. Lower energy consumption.
d. Low power factor.
Answer:A

UNIT-3

1. A 4 pole, 50 Hz alternator will turn at:

A. 1500 RPM
B. 3000 RPM
C. 6000 RPM
D. 12000 RPM

Answer:A

2.The type of alternator used in hydropower stations:

A. Turbo
B. Salient pole
C. Non-salient
D. Any of the above

Answer:B

3. Drop in alternator frequency is resolved by:

A. Using voltage regulator
B. Employing amortisseur windings
C. Raising speed of prime mover
D. None of these

Answer:C

4. With the increase in speed of alternator increases, the frequency:

A. Increases
B. Decreases
C. Remains same

D. Answer:A

5. Very often alternators are connected in parallel because:

A. It makes repairing convenient
B. It is easy to install or remove units when necessary
C. It increases reliability of power system
D. All of these

Answer:D

6. Of two parallel operating alternators, the power input to one alternator is cut-off, the alternator will:

A. Run as synchronous motor in opposite direction
B. Immediately stop
C. Run as synchronous motor in same direction
D. Burn

Answer:C

7. A stationery alternator should not be connected to the live bus-bar:

A. True
B. False

Answer:A

8. Of given conditions which of the following is not necessary to be satisfied for synchronizing an incoming alternator to an already operating alternator:

A. Same phase sequence
B. Same frequency
C. Same voltage magnitude
D. Same prime mover speed

Answer:D

9. If prime mover of an alternator supplying load to infinite busbar is suddenly stutdown, then it will:

A. Stop
B. Run as motor in same direction
C. Run as motor in opposite direction
D. Run same as before

Answer:B

10. The maximum power developed in a synchronous motor occurs at a which coupling angle:

A. 30°
B. 60°
C. 90°
D. 180°

E. Answer:C

11. The synchronous motor's V curve is plotted between which of the two given parameters

A. Power factor and speed
B. Field current and speed
C. Armature current and field current
D. None of these

Answer:C

12. Keeping constant voltage an increase in frequency will:

A. Increase Eddy current losses
B. Decrease Eddy current losses

C. Cause no effect on Eddy current losses

D. Answer:C

13.

In which of the following frequency control method tie lines may be overloaded?

A.Flat frequency control

B.Flat tie line control

C.Parallel frequency

D.All of the above

Answer:A

14. Power system network has a total power of 5000 MW at 50 Hz supplying to the different consumers. Frequency is varying at 1.5% per change of 2% load. Assume R =0.004 Hz/MW. Find the steady state frequency deviation if a sudden loss of 200 MW occur due to tripping of one of the transmission line?

A.50 Hz

B.0.52 Hz

C.0.48 Hz

D.-0.52 Hz

Answer:B

15. Load frequency and economic dispatch controller are working

A.Independently

B.Together with

C.Sequential

D.None of above

Answer:A

16. Economical dispatch controller has

A. Fast response

B. Slow response

C. Very Fast response

D. None of above

Answer:B

17. GRCs for which of the power plant is ignored

A. Hydro

B. Thermal

C. Nuclear

D. All of above

E. Answer:A

18. The effect of speed governor dead band is that

A. Governor becomes dead

B. Increase or decrease in the speed occurs before position of control valve changes

C. Speed becomes constant

D. None of above

Answer:B

19. Governor dead bad cause due to

A. Mechanical friction

B. Backlash

C. Valve overlaps in hydraulic relays

D. All of above

Answer:D

20. n the presence of GRCs and dead band, the system becomes

A. Highly non-linear

B. Linear

C. Non-linear

D. None of above

Answer:A

21. Decentralized control system is used for larger power system because

A. Centralized system is not possible

B. Centralized control is more inefficient than decentralized control

C. Modern LFC algorithm is difficult to implement in centralized manner

D. All of above

Answer:C

22. Steady-state stability of a power system is improved by

A. Reducing fault clearing time

B. Using double circuit line instead of single circuit line

C. Single pole switching

D. Decreasing generator inertia

Answer:B

23.
power frequency control is slow due to

A. turbine and generator moment of inertia

B. turbine and generator troque

C. turbine and generator force

D. All of the above

Answer:A

24. Two area control means

A. One power system are involved

B. two or more power system are involved

C. A and B

D. None of them

Answer:B

25. This equation shows K sg/(1+T sgs)

A. Turbine Model

B. Model of Speed Governing System

C. generator-load model

D. All of them

Answer:C

26. The maximum permissible change in power frequency is

A.±5 Hz

B.±0.5 Hz

C.±0.6 Hz

D.± 0.05 Hz

Answer:B

27. Automatic generation and voltage regulation equipment is installed on each generator

A. Load frequency

B. Excitation voltage

C. Both A and B

D. None of these

Answer:C

28. They take care of small changes in load demand

A. Without change in frequency and voltage

B. Without change in Power and voltage

C. Without change in Real Power and Reactive power

D. None of these

Answer:A

29. The change in load demand, this will change in alternator

A. Power angle

B. Excitation angle

C. Firing angle

D. None of these

Answer:A

30. Maintain network frequency constant so that the powers so that the power station are satisfactorily parallel on the system run at the desired speed correct time is obtained from

a. Synchronoscope

b. Two lamp method

c. Three method

d. None of these

Answer:A

UNIT-4

1. Power frequency control is slow due to

A. turbine and generator moment of inertia
B. turbine and generator troque
C. turbine and generator force
D. All of the above

Answer:A

2. Change in load demand can be identified as

A. slow varying changes in mean demand

B. fast random variations around the mean

C. A and B

D. None of them
Answer:C

3. central economic dispatch computer is abbreviated

A. CEDC

B. CEC

C. EDC

D. none of them
Answer:A

4. time constant of speed governor

A. K1KC/K2

B. K1KC K3/K4

C. 1/K5 K4

D. none of them
Answer:C

5. Why tapping is necessary?
a) To provide a neutral point
b) To vary secondary voltage
c) To control real and reactive power flow in the network
d) For neutral point, variation in secondary voltage, controlling power flow
Answer:D

6. Common range pf tap changing is _____
a) 5%
b) 7%
c) 15%
d) 10%
Answer:A

7. How tap changing is achieved?
a) Voltage variation with constant flux and constant voltage turn
b) With varying flux

c) Either by voltage variation or by flux variation
d) Can’t be done by variation in voltage or flux

Answer:C

8. Negative tapping means _____
a) less turns than positive tap
b) less turns than principal tap
c) less turns than zero tap
d) more turns than principal tap

Answer:B

9. Tapping is done at _____
a) primary only
b) secondary only
c) primary or secondary side
d) on both sides

Answer:C

10. For achieving large voltage regulation tapping should be done at _____
a) at the upper ends
b) at the lower ends
c) at the centre
d) anywhere

Answer:C

11. Tap changing do not causes change in losses of a transformer.
a) True
b) False

Answer:B

12. Off-circuit tap changer is used when transformer is _____
a) deenergized
b) energized
c) can be used in either energy conditions
d) never used

Answer:A

13. Voltage control means

a) Boosting the feeder voltage

b) Reducing the line voltage under over voltage conditions

c)Keeping the voltage with allowable limits

d) None

Answer:C

14. Which are the shunt compensation devices

a) TCSC

b) SSSC

c) UPFC

d)SVC

Answer:d

15. FACTS devices are generally used for to compensate_____of the transmission line

a)Reactive power

b) active power

c) apparent power

Answer:A

16. SVC and STATCOM are_____ devices.

a. series

b. series and shunt

c. shunt and series

d.Shunt

Answer:d

17. **SVC stands for_____**.

a. Static var compesentator

b. Static voltage controller

c. Static var converter

d. Static voltage converter

Answer:A

18. **STATCOM is_____ regulating device.**

a. Current

b.Voltage

c. Current and Voltage

d. Power factor

Answer:B

19. The main Objective of series compensation

a) It improve the power factor

b) It reduces the fault currents

c)Reduce the voltage drop over long distance

d) None

Answer:c

20. Disadvantage with series compensation

a) Reduce the stability

b) increase the voltage drop

c) Reduce the power factor

d)increase in fault current

Answer:d

21. **What limits the loading capability_____**

a. Thermal

b. Dielectric

c. Stability

d. All of These

Answer:d

22. The voltage fluctuations are largely a consequence of the _____ in series impedances of lines, transformers, and generators.

a. Current

b. Power

c.Voltage drop

d. None of these

Answer:c

23. Load compensation is the management of _____ to improve the quality of supply in ac power systems.

a. Active power

b. Reactive power

c. Apparent power

d. Both a & b

Answer:b

24. Objectives of Load compensation_____

a. Power-factor correction.

b. Improvement of voltage regulation.

c. Load balancing

d. All of These

Answer:d

25. A transformer can have zero voltage regulation at _____
a) Leading power factor
b) Lagging power factor
c) Unity power factor
d) Zero power factor

Answer:A

26. What will happen to a given transformer if it made to run at its rated voltage but reduced frequency?
a) Flux density remains unaffected
b) Iron losses are reduced
c) Core flux density is reduced
d) Core flux density is increased

Answer:d

27. Negative voltage regulation indicates _____
a) Capacitive loading only
b) Inductive loading only
c) Inductive or resistive loading
d) Cannot be determined

Answer:A

28. A good voltage regulation of a transformer indicates _____
a) output voltage fluctuation from no load to full load is least
b) output voltage fluctuation with power factor is least
c) difference between primary and secondary voltage is least
d) difference between primary and secondary voltage is maximum

Answer:A

29. Minimum voltage regulation occurs when the power factor of the load is _____
a) Unity
b) Lagging
c) Leading
d) Zero

Answer:c

30. Reactive power is expressed in?
a) Watts (W)
b) Volt Amperes Reactive (VAR)
c) Volt Ampere (VA)
d) No units

Answer:b

Unit-5

What is the full form of SCADA?
a) Supervisory Control and Document Acquisition
b) Supervisory Control and Data Acquisition
c) Supervisory Column and Data Assessment
d) Supervisory Column and Data Assessment

Answer:b

2. DCS is a _____
a) Distributed Control System
b) Data Control System
c) Data Column System
d) Distributed Column System

Answer:A

3. What is SCADA?
a) Software
b) Process
c) System
d) Hardware

Answer:b

4. The control in SCADA is _____
a) Online control
b) Direct control
c) Supervisory control
d) Automatic control

Answer:c

5. When did the SCADA start?
a) 1980s
b) 1990s
c) 1970s
d) 1960s

Answer:D

6. Which of the following is an example of the SCADA system?
a) Emerson Delta V
b) Honeywell PlantScape
c) Yokogawa CENTUM
d) PowerStudio Deluxe

Answer:D

7. How many levels are present in a complex SCADA system?
a) 3 – levels
b) 5 – levels

c) 4 – levels
d) 6 – levels

Answer:c

8. Which of the following is not the component of a SCADA system?
a) Database server
b) I/O system
c) PLC controller
d) Sparger controller

Answer:d

9. Which of the following is the heart of a SCADA system?
a) PLC
b) HMI
c) Alarm task
d) I/O task

Answer:d

10. he parameter E which we use for least square method is called as _____
a) Sum of residues
b) Residues
c) Error
d) Sum of errors

Answer:A

11. A power system will have greater flexibility of operation if they have _____
a) Only Base load plants operating in combination
b) Various types of power plants operating in combination
c) Only Peak load plants operating in combination
d) Only thermal power plants operating in combination

Answer:b

12. Cloud base energy management system provides the ability to

a. Remotely control HVAC

b. Collect real time data

c. Generate intelligent, specific and real time guidance

d. Only b and c

e. All of these

Answer:e

13. The monitor and control of energy management system is done by using

a. MATLAB
b. SCADA
c. AUTO - CAED
d. All of these
e. None of these

Answerb

14. The energy strategies of companies have the principle of

a. restoring and preserving the environment

b. reducing wastes and pollutants

d. all of these

e. none of these

Answer:D

15. In passive potential energy strategies,

a. There is no systematic planning

b. Measures with low profitability is not considered

c. One should have high knowledge of the energy price

d. All of these

Answer:A

16. Maximum demand charges are given in

a. kWh

b. kVA

c. kVAr

d. All of these

e. None of these

Answer:B

17. Energy management is a key component of

a. Environmental management

b. Carbon management

c. Nitrogen management

d. Water management

Answerb

18. The main objective of energy management is to

a. Minimize energy cost

b. Minimum environmental effects

c. Maintain optimum energy procurement and utilization

d. Only A and B

e. All of these

Answer:e

19. Which of the following statement is true?

a) A transition is a change from one state to another

b) Transitions may be spontaneous, but usually some event triggers them

c) An event is a noteworthy occurrence at a particular time; events have no duration

d) All of the mentioned

Answer:D

20. Every finite automaton specification must contain which of the following?

a) Descriptions of the automaton's states in a way that allows them to be distinguished, such as by naming each one;

b) Descriptions of transitions indicating each transition source state, its target state, and the events that trigger it;

c) Designation of an initial state, the starting place for state transitions

d) All of the mentioned

Answer:D

21. Which of the following represents the State Diagram?

a) The finite automaton initial state is designated by a special initial pseudo-state depicted as a large black dot at the tail of an arrow pointing at the initial state

b) A finite automaton may execute forever or it may halt in a final state

c) Transitions are represented by solid arrows labeled with one or more transition strings that describe the circumstances under which the transition is triggered and the actions that may ensue

d) All of the mentioned

Answer:D

22. Which of the statements state the name compartment?
a) The first compartment is the name compartment
b) It contains the state name; State names are optional and may be path names
c) The name compartment can never be omitted
d) The first compartment is the name compartment, It contains the state name; State names are optional and may be path names

Answer:D

23. Sequential composite states simplify state models in two ways?

a) They organize states into hierarchies

b) They consolidate many transitions

c) All of the mentioned

d) None of the mentioned

Answer:C

24. Which of the following are composite states?

a) A sequential composite state

b) A concurrent composite state

c) All of the mentioned

d) None of the mentioned

Answer:C

25. What is sequential and concurrent composite state means?

a) A concurrent composite state contains a single state diagram composed of sub-states or inner states and the transitions between them

b) A sequential composite state contains two or more sequential state diagrams in regions separated by dashed lines called concurrent region boundary lines

c) All of the mentioned

d) None of the mentioned

Answer:D

26. What does deterministic and non deterministic automation?

a) A non-deterministic finite automaton is a finite automaton that has no spontaneous transitions and has a single transition that it must make in response to every event in each of its states

b) A deterministic finite automaton is one with multiple transitions

c) All of the mentioned

d) None of the mentioned

Answer:D

27. **STATE DIAGRAM are used to capture the _____ of a software system**

A. event
B. behavior
C. state
D. class

Answer:B

28. Inside the states, the events are encountered to handle without leaving the state. This is known as_____
a. state machine
b. state transition
c. internal transition
d. external transition
Answer:B

29. The relationship between two states is called _____

a. transition

b. state

c. association

d. generalization

Answer:A

30. What is stand alone data acquisition systems often called?
a) Data Blogger
b) Data Logger
c) Data Vlogger
d) Digital Blogger
Answer:B