OBJECTIVE QUESTIONS

1. The demand factor for a residential load is about
   (a) 2.1　　　　(b) 1.2　　　　(c) 0.2　　　　(d) 0.7

2. The diversity factor (a) is always more than 1 (b) is always less than 1 (c) may be less or more than 1 (d) may be as high as 100.

3. Which statement is true
   (a) peak diversity factor and group diversity factor are always equal.
   (b) peak diversity factor is always less than group diversity factor.
   (c) peak diversity factor cannot be less than group diversity factor.
   (d) peak diversity factor may be more or less than group diversity factor.

4. The demand factor is equal to
   (a) maximum demand/connected load.
   (b) connected load/maximum demand.
   (c) maximum demand/average demand.
   (d) average demand/connected load.

5. The chronological load curve shows
   (a) The variation in demand from instant to instant during 24 hours.
   (b) the total number of hours for which a particular load lasts during the day.
   (c) the total energy consumed upto different times of the day.
   (d) variation in demand factor during 24 hours.

6. The load factor is equal to
   (a) average load/peak load.
   (b) peak load/average load.
   (c) average load/connected load.
   (d) average load/base load.

7. The curve shown in Fig. A-1 is
   (a) chronological load curve.
   (b) annual load duration curve.
   (c) mass curve.
   (d) energy load curve.

8. The load factor of the curve shown in Fig. A-1 is
   (a) 70%　　　　(b) 60%
   (c) 50%　　　　(d) 20%

9. The energy indicated by the curve of Fig. A-1 is
   (a) 876000 MWh　　(b) 175200 MWh
   (c) 525600 MWh　　(d) 438000 MWh

10. The curve shown in Fig. A-2 is
    (a) annual load duration curve.
    (b) load duration curve.
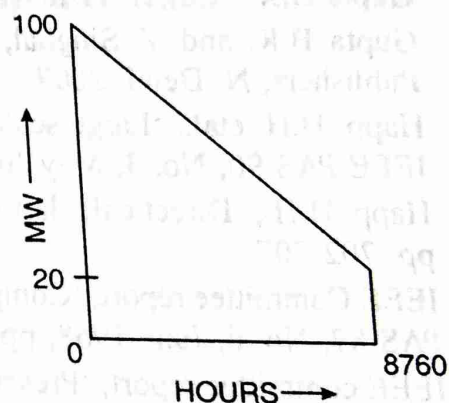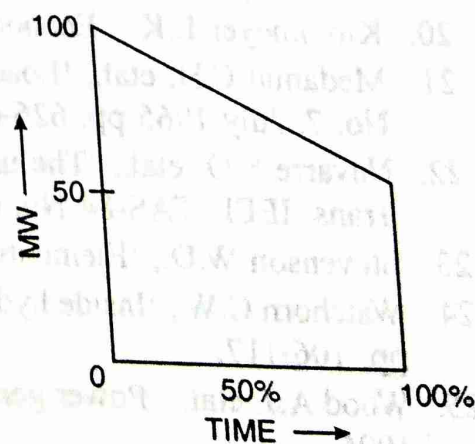   (c) chronological load curve.
    (d) mass curve.

Fig. A-1

Fig. A-2

11. As regards Fig. A-1 and A-2 which is true
    (a) the curve in Fig. A-1 has higher load factor than that in Fig. A-2.
    (b) the curve in Fig. A-2 has higher load factor than that in Fig. A-1.
    (c) both the curves have the same load factor.
    (d) the load factor of any one of these may be greater than that of other depending on plant efficiency.

12. For a generating plant
    (a) the utilisation factor is always less than 1.
    (b) the utilisation factor is always more than 1.
    (c) the utilisation factor may be more or less than 1.
    (d) the utilisation factor and load factor are always equal.

13. The capacity factor of a plant is equal to
    (a) maximum load/average load.
    (b) average load/maximum load.
    (c) maximum load/plant capacity.
    (d) average load/plant capacity.

14. Which of the following is correct
    (a) load factor = capacity factor × utilisation factor.
    (b) utilisation factor = capacity factor × load factor.
    (c) Capacity factor = load factor/utilisation factor.
    (d) capacity factor = load factor × utilisation factor.

15. Which of the following is true
    (a) the load factors of base and peak load plants are always equal.
    (b) the load factor of peak load plant is always more than that of base load plant.
    (c) the load factor of base load plant is always more than that of peak load plant.
    (d) the load factor of peak load plant may be more or less than that of base load plant.

16. A mass curve can be plotted from
    (a) load duration curve.
    (b) chronological load curve.
    (c) energy load curve.
    (d) both load duration curve and chronological load curve.

17. If the rated plant capacity and maximum load of a generating station are equal, then
    (a) load factor is 1.
    (b) capacity factor is 1.
    (c) load factor and capacity factor are equal.
    (d) utilisation factor is poor.

18. The capital cost of a plant depends on
    (a) total installed capacity only.
    (b) total number of units only.
    (c) total installed capacity as well as number of units.
    (d) neither the installed capacity nor the number of units.

19. Plants A and B have the same total installed capacity and are installed at the same time. However plant A has 10 units and plant B has 5 units. Then
    (a) capital costs of both the plants are equal.
    (b) capital cost of plant A is more than that of B.
    (c) capital cost of plant B is more than that of A.
    (d) capital cost of plant A may be more or less than that of B.

20. The interest on the capital cost is included in the
    (a) annual fixed cost.
    (b) annual operating cost.
    (c) both fixed and operating cost.
    (d) either fixed cost or operating cost.

21. As the load factor of generating plant increases the generation cost per unit energy generated
    (a) decreases.
    (b) increases.
    (c) may increase or decrease.
    (d) remains the same.

22. The annual depreciation reserve depends on
    (a) capital cost only.
    (b) capital cost and salvage value only.
    (c) only the method of calculating depreciation reserve.
    (d) the capital cost, salvage value and the method of calculation.

23. Which of the following is wrong ?
    (a) operating cost of a hydro plant is less than that of a steam plant.
    (b) operating cost of a nuclear plant is less than that of a hydro plant.
    (c) operating cost of a diesel plant is more than that of a steam plant.
    (d) operating cost of a steam plant is more than that of a nuclear plant.

24. The long term load forecast is needed for
    (a) planning the addition in generation capacity.
    (b) operation of the plant.
    (c) planning the addition in generation capacity as well as operation of the plant.
    (d) economic operation of the plant.

25. Two areas A and B have equal connected loads. However load diversity in area A is more than that in B. Then
    (a) maximum demands of the two areas would be equal.
    (b) maximum demand of A would be more than that of B.
    (c) maximum demand of B would be more than that of A.
    (d) maximum demand of A may be more or less than that of B.

26. The fuel cost is included in
    (a) annual fixed cost.
    (b) annual operating cost.
    (c) both the annual fixed cost and operating cost.
    (d) either fixed cost or operating cost.

27. Which of the following plants requires maximum space for storage of fuel
    (a) hydro-electric plant.
    (b) diesel plant.
    (c) steam plant.
    (d) nuclear plant.

28. The power which must be available even under emergency conditions is known as
    (a) spinning reserve.
    (b) cold reserve.
    (c) firm power.
    (d) hot reserve.

29. A synchronous capacitor can supply
    (a) lagging vars only.
    (b) leading vars only.
    (c) both leading and lagging vars.
    (d) neither leading vars nor lagging vars.

30. The addition of static capacitors in a system
    (a) improves system stability.
    (b) decreases system stability.
    (c) has no effect on system stability.
    (d) none of the above.

31. The units for incremental cost are
(a) Rs. per MWh
(b) Rs. per MW
(c) Rs.
(d) Rs. per hour.

32. Two generating plants feed a load centre through a transmission network. For maximum economy
(a) the incremental fuel cost should be the same for the two stations.
(b) the two stations should share the load in the ratio of their installed capacities.
(c) the more efficient plant should supply more load.
(d) the incremental cost of power delivered at the load centre should be the same for both the plants.

33. The principle of incremental costs is used.
(a) to decide the total plant capacity to be operated.
(b) to decide the load allocation between units in operation.
(c) to decide the sequence of adding units.
(d) all the above.

34. The penalty factor
(a) is always less than 1.
(b) is always more than 1.
(c) may be more or less than 1.
(d) is equal to or less than 1.

35. A system has two sources having plant loadings P_1 and P_2. The transmission loss P_L is
(a) $P_1^2 B_{11} + P_1 P_2 B_{12} + P_2^2 B_{22}$
(b) $2P_1^2 B_{11} + P_1 P_2 B_{12} + 2P_2^2 B_{22}$
(c) $P_1^2 B_{11} + 2P_1 P_2 B_{12} + P_2^2 B_{22}$
(d) none of the above.

36. A generating unit in a power system is generating 100 MW. It is known that transfer of 100 MW from this unit to the load centre causes a transmission loss of 15 MW. The penalty factor for this unit is
(a) 0.7
(b) 0.85
(c) 1.15
(d) 1.43

37. If a generating unit is situated very close to load centre the penalty factor for this unit is
(a) about 1
(b) zero
(c) infinity
(d) negative.

38. A generating unit has an incremental production cost of Rs. 60 per MWh. If the penalty factor for this unit is 1.2. the incremental cost of power delivered is
(a) Rs. 50 per MWh
(b) Rs. 72 per MWh
(c) Rs. 61.2 per MWh
(d) Rs. 48 per MWh

39. The units for heat rate are
(a) k cal/kWh
(b) kWh/k cal
(c) k cal/hour
(d) kW

40. The advantage of hydro plants is
(a) low operating cost.
(b) they can be started and loaded very quickly.
(c) they can be used as base load plants as well as peak load plants.
(d) all the above.

41. The run off river plants have very high firm capacity.
(a) true
(b) false

42. For maximum economy the generation schedule in a hydro-thermal system should be decided by
(a) maximum hydro efficiency method.
(b) equal incremental plant costs.
(c) constant steam generation.
(d) solution of co-ordination equations.

43. The successful parallel operation of alternator is due to the presence of
   (a) resistance
   (b) reactance
   (c) reluctance
   (d) armature reaction.

44. Two alternators A and B are operating in parallel. If excitation of A is increased
   (a) reactive power of A is increased while that of B is decreased.
   (b) reactive power of A is increased while that of B is remains unchanged.
   (c) reactive power of A is decreased.
   (d) both real and reactive power of A are increased.

45. The sharing of real power by two alternators operating in parallel depends on
   (a) voltage-load characteristics.
   (b) speed-load characteristics.
   (c) both voltage-load and speed-load characteristics.
   (d) excitations of the two machines.

46. The synchronising power is maximum at
   (a) full load.
   (b) a load slightly higher than full load.
   (c) twice full load.
   (d) no load.

47. An alternator is operating on an infinite bus bar. If the excitation of the alternator is increased
   (a) real power output of the machine will be increased.
   (b) power factor of the machine will decrease.
   (c) power factor of the machine will increase.
   (d) both the real power and power factor of the machine will decrease.

48. An alternator is supplying a load. If the excitation of the alternator is changed then
   (a) power factor of the alternator will change.
   (b) terminal voltage of alternator will change.
   (c) both terminal voltage and power factor will change.
   (d) either power factor or terminal voltage will change.

49. An under-excited alternator operates at
   (a) lagging power factor.
   (b) leading power factor.
   (c) unity power factor.
   (d) leading or unity power factor.

50. Which of the following statements is correct in respect of alternators used in steam plants
   (a) they have horizontal configuration.
   (b) they have generally 2 or 4 poles.
   (c) they have small diameters.
   (d) all the above.

51. Generally the alternators used in hydro-electric plants have horizontal configuration
   (a) true
   (b) false

52. Which of the following have, generally, salient pole construction
   (a) alternators used in steam plants.
   (b) alternators used in hydro plants.
   (c) both (a) and (b).
   (d) neither (a) nor (b).

53. An excitation system should have
   (a) low time constant.
   (b) high transient response.
   (c) high reliability.
   (d) all the above.

54. When two alternators are running in perfect synchronism the synchronising power is zero
   (a) true
   (b) false.

55. Modern alternators use
   (a) electromechamical voltage regulators
   (b) magnetic amplifier regulators.
   (c) electronic regulators.
   (d) none of the above.

A power system needs injection of vars
(a) at peak load.   (b) at off-peak load.
(c) both at peak load and off-peak load.
(d) when the load is neither too high nor too low.

The injection of reactive power is needed
(a) to get a good voltage profile.
(b) to increase the voltage at the receiving end.
(c) to compensate for line losses.
(d) to supply a part of active power requirement of the load.

58. The changes in reactive power at a bus have a great effect on the voltage magnitude
(a) of that bus   (b) of distant busses
(c) of all the busses   (d) none of the above.

59. The maximum permissible change in system frequency is
(a) ± 6%   (b) ± 5%   (c) ± 2.5%   (d) ± 1%

60. In a power system
(a) the action of p-f loop is faster than that of Q-V loop.
(b) the action of Q-V loop is faster than that of p-f loop.
(c) the speed of response of both Q-V and p-f loops is almost the same.
(d) the action of p-f loop may be faster or slower than that of Q-V loop.

61. The units for speed regulation of governor are
(a) Hz   (b) Hz per MVA
(c) Hz per MW   (d) none of above.

62. The speed regulation R for a large size alternator is about
(a) 10 Hz per MW   (b) 5 Hz per MW
(c) 1 Hz per MW   (d) 0.02 Hz per MW

63. At times of peak load a power system needs
(a) injection of lagging vars.   (b) injection of leading vars.
(c) injection of lagging or leading vars.   (d) none of the above.

64. At times of low loads a power system needs
(a) shunt capacitors   (b) synchronous condensers
(c) shunt reactors   (d) all the above.

65. A load curve is a plot of
(a) load versus generation capacity   (b) load versus current
(c) load versus time   (d) load versus cost of power

66. In a system the base load is the same as maximum demand then the load factor is
(a) 1   (b) 0
(c) infinity   (d) 1%

67. Which of the following plants takes least time in starting from cold conditions to full load condition
(a) nuclear plant   (b) steam plant
(c) hydro electric plant   (d) gas turbine plant

68. A high diversity factor of the load in a power system
(a) reduces the installation cost of plant
(b) increases the installation cost of plant
(c) does not affect the installation cost of plant
(d) any of above

69. Flow of active power through a line in a power system may be controlled by
   (a) tap changing transformer   (b) phase shifting transformer
   (c) synchronous phase modifier   (d) all the above

70. The pumped storage scheme is employed to supply
   (a) during peak load hours   (b) during off-peak hours
   (c) base load   (d) any of above

71. A generating station has a maximum demand of 20 MW and connected load of 40 MW. Total units generated are 4.36×10^7 per year. The demand factor is
   (a) 2   (b) $\frac{2}{3}$
   (c) $\frac{1}{2}$ (d) $\frac{1}{3}$

72. A synchronous condenser is a
   (a) dc generator   (b) induction motor
   (c) over excited synchronous motor   (d) under excited synchronous motor

73. The advantage of static capacitors for improvement of power factor is
   (a) low loss   (b) little maintenance cost
   (c) ease in installation   (d) all the above

74. The area under load curve divided by 24 gives
   (a) average load   (b) peak load
   (c) minimum load   (d) energy generated

75. A 100 MW station is connected to infinite bus. If its exitation is increased, the terminal voltage will
   (a) increase   (b) decrease
   (c) remain constant   (d) any of above

76. The modern trend in electric power generation is
   (a) to have large number of small sized plants situated at different places
   (b) to have large sized thermal plants near load centre
   (c) to have large sized thermal plants near coal fields.
   (d) none of above

77. An alternator is connected to infinite bus. If excitation of alternator is increased
   (a) real power output of generator increases
   (b) power factor of alternator decreases
   (c) power factor of alternator increases
   (d) both (a) and (c)

78. A hydro electric power station is commonly found in
   (a) desert areas   (b) hilly areas
   (c) swamps   (d) grass lands

79. Which of the following is more than 1 ?
   (a) load factor   (b) demand factor
   (c) diversity factor   (d) capacity factor

80. Plant capacity factor is
   (a) actual energy produced/maximum possible energy that could have been produced (based on installed capacity)
   (b) actual energy produced/(plant capacity × hours for which the plant has been in operation)
   (c) energy generated in a given period/(maximum demand × hours of operation of the plant)
   (d) none of above

For stable operation of interconnected system, the passive element which can be used as interconnecting element is

(a) reactor

(b) resistor

(c) capacitor

(d) any of above

If a synchronous machine is underexcited, it operates at lagging power factor when operated as

(a) synchronous motor

(b) synchronous generator

(c) either (a) or (b)

(d) none of above

For a synchronous generator connected to a power system, increasing the excitation will

(a) decrease reactive power generation

(b) increase reactive power generation

(c) decrease active power generation

(d) increase active power generation

84. Most of the steam turbo generators are wound for

(a) 2 poles

(b) 10 to 20 poles

(c) 20 to 30 poles

(d) 6 poles

85. In order to have lower cost of electrical energy generation it is necessary to have

(a) low load factor and diversity factor

(b) low load factor and high diversity factor

(c) high load factor and low diversity factor

(d) high load factor and high diversity factor

86. In the load duration curve of an integrated system, the uppermost crust represents the energy contributed by

(a) base power stations

(b) major thermal stations

(c) peaking hydro or gas stations

(d) any of above

87. A consumer has a connected load of 2 kW and a maximum demand of 1kW. The demand factor is

(a) 2

(b) 0.5

(c) 4

(d) 0.25

88. If the load on a stand alone generator is increased without increasing the mechanical power input to the prime mover

(a) the generator will slow down

(b) the generator will speed up

(c) the generator voltage will increase

(d) the generator field current will increase

89. When two ac generators are operating in parallel and the field current of one of the generators is increased, it will

(a) take a larger share of load

(b) speed up

(c) cause a flow of reactive power between the two machines

(d) take a smaller share of load

90. Changes in load division between synchronous generators operating in parallel are accompalished by

(a) adjusting the generator voltage regulators

(b) changing the mechanical power input to prime movers of the generators

(c) lowering the system frequency

(d) increasing the system frequency

91. When the mechanical power input to the prime mover of a synchronous generator operating in parallel with other generators, is increased, the rotor of the generator will
    (a) increase in average speed
    (b) retard with respect to stator revolving field
    (c) advance with respect to stator revolving field
    (d) none of above

92. An ac generator is operating with a field current of 100A. If the field current is increased to 125A with the same electrical load on the machines, it will
    (a) be less apt to go out of synchronous
    (b) be more apt to go out of synchronism
    (c) operate at a new torque angle
    (d) overheat

93. Phase shift occurs between the sending and receiving ends of ac transmission lines as a result of
    (a) reactance of lines
    (b) resistance of lines
    (c) voltage at which the lines operate
    (d) conductor size

94. When power is transferred between two power systems, power will flow from the power system with
    (a) the greater leading power angle
    (b) the lesser leading power angle
    (c) the higher voltage level (d) the lower voltage level

95. Two power systems A and B are operating in parallel. If system A increases generation to deliver 100MW to system B and system B does not simultaneously reduce generation, what will be the effect
    (a) frequency will decrease
    (b) frequency will increase
    (c) frequency may or may not change
    (d) voltage of system B will rise

96. When a phase shifting transformer's taps are moved in such a direction as to advance the phase position
    (a) var flows will increase
    (b) var flows will decrease
    (c) these will be an increase in power flow in the line
    (d) voltage will be increased

97. In a single phase circuit, the active power is the product of
    (a) voltage and current in the circuit
    (b) voltage, current and sine of angle between voltage and current
    (c) voltage, current and tangent of angle between voltage and current
    (d) voltage, current and cosine of angle between voltage and current

98. Var flows in a circuit
    (a) from a point of higher voltage to that of lower voltage
    (b) from a point of lower voltage to that of higher voltage
    (c) without any effect on the voltage of terminals
    (d) none of these

99. When a 100 MVA generator is operating at 0.8 logging power factor the vars produced are
    (a) 80   (b) – 80   (c) 60   (d) – 60

100. When it is required that a synchronous generator should generate more vars then
    (a) field current of generator should be decreased
    (b) field current of generator should be increased
    (c) speed of machine should be decreased
    (d) mechanical power input to machine should be increased

On long high voltage line, under peak load conditions, var compensation is provided by using

(a) series inductors
(b) shunt inductors
(c) shunt capacitors
(d) any of above

When vars flow in a circuit, the losses in the circuit

(a) increase
(b) decrease
(c) may increase or decrease
(d) will not be affected

In a circuit with appreciable capacitance, the receiving end voltage under off peak conditions

(a) will always be lower than sending end voltage
(b) may be higher than sending end voltage
(c) will always be equal to sending end voltage
(d) any of above

When many different types of sources are available, these sources should be used in such a way that

(a) steam generators supply maximum load
(b) steam generators supply minimum load
(c) overale production cost is minimum
(d) the most efficient system should supply more load.

105. When load on a thermal plant is increased, the fuel input

(a) is not affected
(b) decreases
(c) increases
(d) any of above

106. The use of incremental heat rate curves of thermal generating plants is to find

(a) total fuel cost in Rs. per hour
(b) cost of generation
(c) loading of different generators
(d) all the above

107. The advantage of computer control of thermal generating units is that

(a) var output of generators can be optimised
(b) all generators will supply equal loads
(c) each generator will be loaded proportional to its rating
(d) units will be loaded so as to operate at equal incremental cost

108. When thermal generating units are loaded as per equal incremental cost criterion, the

(a) fuel costs are minimum (b) production costs are minimum
(c) generation cost is minimum
(d) total annual cost is minimum

109. In a system with hydro as well as thermal generating units, the proportion of hydrogeneration can be increased by

(a) increasing the price (gamma) of water
(b) reducing the price (gamma) of water
(c) increasing the field current of all generators
(d) increasing the field current of hydro generators

110. In economic dispatch including transmission losses, the effect of increased penalty factor is to

(a) increase load on that generator
(b) decrease load on that generator
(c) Keep the load on that generator constant
(d) either (a) or (b)

111. In a power system with long transmission lines, economic dispatch means

(a) equal incremental costs at generator buses
(b) equal incremental costs at load buses
(c) equal load on all generators
(d) that generators share the load proportional to their rating

112. Governors for speed control of generating units provide
     (a) flat speed load characteristic
     (b) an increase of speed units increase of load
     (c) a decrease of speed with increase of load
     (d) either (b) or (c) depending on size of generator

113. Two synchronous generators are operating in parallel. One of them has a 5% governor drop and the other has 8% drop. The generator with higher droop will
     (a) tend to take less load
     (b) tend to take more load
     (c) take the same load as the other generator
     (d) either (b) or (c)

114. In P-f control, an error signal corresponding to decrease in frequency will tend to
     (a) decrease prime mover input
     (b) increase prime mover input
     (c) decrease terminal voltage
     (d) increase terminal voltage

115. In two systems with interconnecting facility, each system
     (a) keeps its own reserve capacity
     (b) can depend on the other system for reserve capacity
     (c) need not keep any reserve capacity
     (d) any of above depending on system size

116. In interconnected systems with tie line bias, the systems respond to
     (a) frequency changes only
     (b) tie line load changes only
     (c) both frequency and the line load changes
     (d) either of above depending on system

117. A power system I is having interconnecting with two other power systems. The frequency bias in this system is 0.2 Hz per 50 MW. One of the other two systems suffers a generation loss of such a magnitude so that frequency drop is 0.02 Hz. Then power system I should
     (a) not be affected
     (b) provide 10MW to the other system
     (c) import 10MW from the other system
     (d) provide 20MW to the other system

118. If the frequency bias is set too low, an interconnected power system will respond to troubles in other systems with
     (a) more than its share of bias response
     (b) less than its share of bias response
     (c) correct the bias response
     (d) none of above

119. If a power system observes an accumulated time error, it should correct it by
     (a) increasing its own generation
     (b) decreasing its own generation
     (c) coordinating time error correction with other interconnected systems
     (d) any of above

120. A metering system for a 220 kV, 3 phase power system has 200 : 1 ratio current transformers in each phase and 600 : 1 ratio potential transformers connected line to ground. If power factor is unity, the actual power in kW will be obtained by multiplying the measured power by a factor
     (a) 360
     (b) 120
     (c) 120000
     (d) 3600

121. SCADA systems require
     (a) a separate communication channel for each RTU
     (b) continuous attendance at each RTU
     (c) frequency shift data channels to RTUs
     (d) provision for entering the retrieving and data at master unit

In star configuration of SCADA
(a) one master unit can serve many RTUs
(b) Each RTU requires a separate master
(c) Each communication channel can have many RTUs
(d) the cost is less than party line system

D-A conectors
(a) are used only at RTUs
(b) provide graphic display
(c) convert voltage and current to proper form for transmission over channels
(d) convert digital data to analog data

The 'select before operate procedure' refers to
(a) selection by RTU of the function to be performed
(b) the method by which the operator cheeks that correct devices have been selected before performing an operation
(c) the information received by master unit from RTU
(d) display of single line diagram of the power system

Transducers
(a) convert digital quantities to analog quantities
(b) convey massage from master unit to RTU
(c) convey confirmation message from RTU to master unit
(d) convert quantities being measured to a current or voltage proportional to measured quantity.

Automatic generation control (AGC)
(a) always requires a special and separate computer
(b) can be provided by a special program in the SCADA master unit computer
(c) cannot include transmission losses
(d) cannot be relied in some cases.

27. If mechanical inputs to prime movers of generators of a power system does not match load changes.
(a) system frequency will be low
(b) system losses will be increased
(c) system losses will be decreased
(d) system frequency and voltage will deviate from normal

28. When a synchronous generator is operating stably and a load change occurs, the rotor will
(a) not be affected
(b) advance in its position relative to stator revolving field
(c) oscillate for some time and finally settle to its new position
(d) either (a) and (b)

129. When the rotor of a synchronous generator oscillates because of load changes, corrective action can be provided by
(a) governor
(b) manual control of excitation
(c) fast acting voltage regulator
(d) all the above

130. EHV lines and equipment
(a) contain only inductance and capacitance
(b) obey the some electrical laws which are valid at low voltages
(c) donot obey the electrical laws which are valid at low voltages
(d) either (b) or (c) depending on system

131. When a long transmission line is supplying peak load
    (a) shunt capacitance and charging current predominate
    (b) the inductance of the line results in substantial voltage drop
    (c) the resistance of line causes large voltage drop
    (d) voltage regulation may be negative.

132. When a long transmission line is operating under off-peak load conditions
    (a) receiving end voltage is always less than sending end voltage
    (b) receiving end voltage may be lower than sending end voltage
    (c) receiving end voltage may be more than sending end voltage
    (d) either (a) and (c)

133. When series capacitors are used in a transmission line
    (a) line stability is decreased
    (b) phase angle between voltages at sending end and receiving end, under peak load conditions, is reduced
    (c) phase angle between voltages at sending end and receiving end, under peak load condition, is increased
    (d) either (b) or (c) depending on system

134. The voltage drop across a series capacitor bank is proportional to
    (a) line current   (b) line voltage
    (c) size of conductor   (d) both line current and voltage

135. Shunt reactors are connected at the terminals of high voltage lines to
    (a) increase the receiving end current
    (b) increase the receiving end voltage under peak load conditions
    (c) decrease the receiving end voltage under peak load conditions
    (d) decrease the receiving end voltage under off peak load conditions

136. The real power transfer over a line depends mainly on
    (a) power angle   (b) sending end voltage V_s
    (c) receiving end voltage V_r (d) $V_s - V_r$

137. The reactive power transfer over a line mainly depends on
    (a) power angle   (b) sending end voltage V_s
    (c) receiving end voltage V_r (d) $|V_s| - |V_r|$

138. For a long line the receiving end voltage under no load conditions is
    (a) equal to sending end voltage   (b) less than sending end voltage
    (c) more than sending end voltage   (d) any of above

139. The units of inertia constant H are
    (a) J per MVA   (b) kV per MVA
    (c) MJ per MVA   (d) kA per MVA

140. The inertia constant H of an alternator of 200 MVA is 6. The value of H corresponding to a base of 300 MVA will be
    (a) 9   (b) 4   (c) 6   (d) 13.5

141. Which has the highest installed generating capacity in India
    (a) thermal   (b) hydro   (c) nuclear   (d) gasturbine

142. The percentage increase in installed generating capacity every year in India is approximately
    (a) 1%   (b) 6%   (c) 20%   (d) 50%

The present nuclear installed generating capacity in India is about

(a) 3% of total
(b) 0.5% of total
(c) 20% of total
(d) 30% of total

Which of the following has highest number of auseiliaries

(a) thermal power plant
(b) hydro power plant
(c) diesel power plant
(d) gasturbine power plant

Which of the following needs very long transmission lines to carry power to load centres

(a) hydroelectric plant
(b) diesel power plant
(c) gasturbine power plant
(d) steam power plant

Which of the following has highest forced outage rate

(a) hydroelectric plant
(b) thermal power plant
(c) diesel power plant
(d) gas turbine power plant

Which of the following causes highest air pollution

(a) steam power plant
(b) hydro power plant
(c) gas turbine power plant (d) diesel power plant

Which of these has the highest efficiency

(a) thermal power plant
(b) hydro power plant
(c) diesel power plant
(d) gas turbine power plant

For proper energy audit it is necessary

(a) to measure and record the quantity and quality of energy input
(b) to measure and record the quantity and quality of waste energy
(c) to determine and record all energy losses
(d) all the above

A synchronous condenser is usually

(a) dc generator
(b) over excited synchronous motor
(c) underexcited synchronous motor
(d) induction motor

Answers to Objective Questions

1. (d)	2. (a)	3. (d)	4. (a)	5. (a)	6. (a)
7. (b)	8. (b)	9. (c)	10. (b)	11. (b)	12. (c)
13. (d)	14. (d)	15. (c)	16. (b)	17. (c)	18. (c)
19. (b)	20. (a)	21. (a)	22. (d)	23. (a)	24. (a)
25. (c)	26. (b)	27. (c)	28. (c)	29. (c)	30. (c)
31. (a)	32. (d)	33. (b)	34. (b)	35. (c)	36. (d)
37. (a)	38. (b)	39. (a)	40. (d)	41. (b)	42. (d)
43. (b)	44. (a)	45. (b)	46. (d)	47. (b)	48. (b)
49. (b)	50. (d)	51. (b)	52. (b)	53. (d)	54. (a)
55. (c)	56. (c)	57. (a)	58. (a)	59. (b)	60. (b)
61. (c)	62. (d)	63. (a)	64. (c)	65. (c)	66. (a)
67. (d)	68. (a)	69. (b)	70. (a)	71. (c)	72. (c)
73. (d)	74. (a)	75. (c)	76. (c)	77. (b)	78. (b)
79. (c)	80. (a)	81. (a)	82. (a)	83. (b)	84. (a)
85. (d)	86. (c)	87. (b)	88. (a)	89. (c)	90. (b)

91. (c)	92. (a)	93. (a)	94. (a)	95. (b)	96. (c)
97. (d)	98. (a)	99. (c)	100. (b)	101. (c)	102. (a)
103. (b)	104. (c)	105. (c)	106. (c)	107. (d)	108. (a)
109. (b)	110. (b)	111. (b)	112. (c)	113. (a)	114. (b)
115. (a)	116. (c)	117. (a)	118. (b)	119. (c)	120. (a)
121. (c)	122. (a)	123. (d)	124. (b)	125. (d)	126. (b)
127. (d)	128. (c)	129. (c)	130. (b)	131. (b)	132. (c)
133. (b)	134. (a)	135. (d)	136. (a)	137. (d)	138. (c)
139. (c)	140. (b)	141. (a)	142. (b)	143. (a)	144. (a)
145. (a)	146. (b)	147. (a)	148. (b)	149. (d)	150. (b)