DEDICATED STUDY RESOURCES

Department of Electrical engineering

Practice Objective Question

SUB:-ENERGY CONSERVATION & AUDIT (2020502)

Q1 The energy sources, that are either found or stored in nature are
a) Secondary Energy Sources **b) Primary Energy Sources**
c) both (a) and (b) d) none of the above

Q2 Inexhaustible energy sources are known as
a) commercial Energy **b) renewable Energy**
c) primary energy d) secondary energy

Q3 Which of the following will generate more light for same wattage?
a) Incandescent bulb b) Conventional tube light
c) CFL **d) LED**

Q4 A device that distributes and filters the light emitted from one or more lamps is____.
a) Control gear b) Lamp **c) Luminaire** d) Starter

Q5 The ratio of luminous flux emitted by a lamp to the power consumed by the lamp is____.
a) Illuminance b) Lux **c) Luminous Efficiency** d) CRI

Q6 Which of the following is the best definition of illuminance?
a) Time rate of flow of light energy
b) Luminous flux incident on an object per unit area
c) Flux density emitted from an object without regard for direction
d) Flux density emitted from an object in a given direction

Q7 One lux is equal to____.
a) one lumen per meter b) one lumen per m3 **c) one lumen per m2** d) None

Q8 What is the typical frequency of operation of electronic ballast?
a) 50 Hz b) 10 kHz c) 50 kHz **d) 30 kHz**

Q9 Color rendering index of Halogen lamps compared to low pressure sodium vapor lamps is
a) Poor **b) Excellent** c) Average d) Very poor

Q10 The efficiency figures for energy efficient motors (in comparison with standard efficiency motor) can be generally higher by____%.
a) 1% **b) 3-7%** c) 10% and above d) 8-10%

Q11 The power consumption, in case of centrifugal loads (like pump, fan, blower etc.), proportional to_____.
a) speed b) square of speed **c) cube of speed** d) not applicable

Q12 What determines the thermal loading on the motor?
a) Duty/Load cycle b) Temperature of the winding
c) Age of the motor d) Ambient conditions

Q13 Unbalance in voltages at motor terminals is caused by_____.
a) Supplying single phase loads disproportionately b) Use of different sizes of cables
c) Both (a) & (b) d) None of the above

Q14 The speed of an AC motor depends on_____.
a) Frequency b) No. of poles **c) both (a) and (b)** d) None of the above

Q15 The speed of the motor can be varied by ___.
a) Changing supply frequency b) Changing no. of poles
c) Using multi speed windings **d) All the above**

Q16 Which of the following are ill suited for energy efficient motors application?
a) Pumps b) Fans **c) Punch Presses** d) All the above

Q17 The inexpensive way to improving energy efficiency of a motor which operates consistently at below 40% of rated capacity is by _____.
a) Operating in Star mode b) Replacing with correct sized motor
c) Operating in delta mode d) None

Q18 Energy efficient transformer core is made up of_____.
a) silicon alloyed iron (grain oriented) b) copper
c) amorphous core - metallic glass alloy d) none of the above

Q19 In a transformer, the magnitude of the mutual flux is

a) High at low loads and low at high loads

b) Low at low loads and low at high loads

c) Varies at low loads and constant at high loads

d) Same at all loads

Q20 The efficiency of transformer compared with that of electric motors of the same rating is
a) About the same
b) Much higher
c) Much smaller
d) Slightly higher

Q21 An ideal transformer is one which
a) Has core of stainless steel
b) Has no losses and magnetic leakage
c) Has a common core for its primary and secondary windings
d) Has inter leaved primary and secondary windings

Q22 Special silicon steel is used for the laminations of transformer, because it has

a) High resistivity and high hysteresis loss

b) High resistivity and low hysteresis loss

c) Low resistivity and high hysteresis loss

d) Low resistivity and low hysteresis loss

Q23 By which of the following method electric power may be transmitted from one location to another location?

1. Under Ground System
2. Overhead system
3. **Both 1 and 2**
4. None of the above

Q24 Name the cable or conductor which connects the distributor to the consumer terminals.

1. **Service Mains**
2. Distributor
3. Feeders
4. None of the above

Q25A booster is a

1. Synchronous generator
2. Shunt-wound generator
3. **Series wound generator**
4. None of the above

Q26The voltage of the single-phase supply to residential consumers is

1. 110 V
2. **230 V**
3. 440 V
4. Any of the above

Q27The conductors of the overhead lines are

1. Stranded conductors
2. Solid conductors
3. **Both solid and stranded**
4. None of the above

Q28The power factor of industrial loads is generally

1. Unity
2. **Lagging**
3. Leading
4. Any of the above

Q29The power transmitted will be maximum when

1. Corona losses are minimum
2. **Receiving end voltage is high**
3. Reactance is high
4. Sending end voltage is high

Q30 Which one of the following is an objective of tariff:

1. Recovery of cost on production of power
2. Recovery of capital investment
3. Profit gain
4. **All of these**

Q31 Which of following is correct statement about Simple tariff:

1. **Has no discrimination of consumers**
2. Charges more to commercial users
3. Enoourages use of electricity
4. Is most commonly used tariff method

Q32 The tariff in which power factor is taken as reference:

1. Sliding scale tariff
2. kVA maximum demand tariff
3. kW and kVAR tariff
4. **All of these**

Q33 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**.

Q34 This tariff is applied for which kind of consumers?
a. Big consumers.
b. Small consumers.
c. Residential consumers.
d. **All of these**.

Q35 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.

Q36 Why is a big consumer charged at a lower rate than the small consumer?
a. Their maximum demand is small.
b. It improves the load factor.

c. Both (a) and (b).
d. None of these.

Q37 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.

Q38 Cogeneration is the simultaneous generation of---------- --.
a) heat and power b) steam and condensate
c) Mechanical Energy and power d) All the above

Q39_____type of steam turbines have high power to heat ratio
a) back pressure turbine b) gas turbine
c) extraction condensing turbine d) None of the above

Q40 The overall efficiency of combined cycle cogeneration is of the order of:
a) 69 – 83 b) 90 – 95 c) 70 – 90 d) 55 – 60

Q41 The cogeneration system which has high overall system efficiency is ----
a) Gas turbine b) Reciprocating engine
c) Back pressure steam turbine d) Combined cycle

Q42 The ratio of actual work output of the turbine to the net energy input is termed as-----
a) Overall efficiency b) Generator efficiency
c) Turbine efficiency d) None of the above

Q43 Cogeneration concept is not applicable to which type of industry?
a) sugar b) paper & pulp c) refinery **d) refractory**

Q44 Heat to power ratio of combined cycle cogeneration is in the range of----------
a) 4.0 – 5.0 **b) 1.0 – 1.7** c) 2.0 – 10 d) 1.0 – 5.0

Q45 The statement "the overall thermal efficiency of an extraction condensing turbine in cogeneration system is lower than that of back pressure turbine system". State whether **True** / False?

Q46 Maximum demand controller is used to_____.
a) switch off essential loads in a logical sequence b) exceed the demand of the plant
c) switch off non-essential loads in a logical sequence d) controls the power factor of the plant

Q47 Capacitors with automatic power factor controller when installed in a plant:
a) reduces active power drawn from grid **b) reduces the reactive power drawn from grid**
c) reduces the voltage of the plant d) increases the load current of the plant

Q48 The following function can not be achieved with automatic power factor controllers.
a) Voltage control b) KILOVAR control **c) kW control** d) PF control

Q49 The following features apply to energy efficient motors by design: a) Energy efficient motors last longer b) Starting torque for efficient motors may be lower than for standard motors State whether the two statements are **True** or False?

Q50 Electronic variable frequency drive (VFD) connected to motors:
a) provide variable speed with high efficiency
b) induces eddy-current in the secondary member of the clutch mechanism
c) is not suitable for variable torque load
d) does not provide variable speed and has low-efficiency

Q51 Variable speed can not be obtained with_____.
a) DC motors controller b) AC motor controller
c) soft starter controller d) AC & DC controllers

Q52 Energy efficient transformer core is made up of_____.
a) silicon alloyed iron (grain oriented) b) copper
c) amorphous core - metallic glass alloy d) none of the above

Q53 The basic functions of electronic ballast excludes one of the following:
a) to ignite the lamp b) to stabilize the gas discharge
c) to reduce lumen output of the lamp d) to supply power to the lamp

Q54 "The judicious and effective use of energy to maximise profits and enhance competitive positions". This can be the definition of:
a) Energy conservation **b) Energy management** c) Energy policy d) Energy Audit

Q55 Lux meter is used to measure……
a) Illumination level b) Sound intensity and illumination level c) Harmonics d) Speed

Q56 Non-contact speed measurements can be carried out by
a) Tachometer b) Stroboscope c) Oscilloscope d) Speedometer

Q57 Infrared thermometer is used to measure
a) Surface temperature b) Flame temperature **c) Flue gas temperature** d) Hot water temperature

Q58 The various types of the instruments, which requires during audit need to be
a) Easy to carry b) Easy to operate c) Inexpensive **d) All (a) to (c)**

Q59 An energy audit team is formed during
a) post audit phase b) audit phase **c) pre-audit phase** d) the time of study

Q60 Which of the following is not part of energy monitoring
a) data recording b) data analysis c) data reporting **d) energy efficiency equipment financing**