University of Mumbai
Examination 2020 under cluster

Program: BE Engineering

Curriculum Scheme: Revised 2016

Examination: Final Year Semester VII

Course Code: ILO7018 and Course Name: Energy Audit and Management

Time: 1 hour   Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	Energy intensity is the ratio of
Option A:	Final consumption / GDP
Option B:	GDP / fuel consumption
Option C:	GDP / energy consumption
Option D:	energy consumption In Mkcal/ GDP
Q2.	Availability based tariff is applicable to
Option A:	Oil
Option B:	Coal
Option C:	Natural gas
Option D:	Electricity
Q3.	The legal framework of energy efficiency in India is given by
Option A:	Electricity Act 2003
Option B:	Energy Conservation Act 2001
Option C:	Indian Electricity Act 1910
Option D:	Electricity Supply Act 1958
Q4.	The percentage of energy saved at the current rate of use, compared to the reference year rate of use, is called
Option A:	Energy Utilization
Option B:	Energy Efficiency
Option C:	Energy saving
Option D:	Energy Performance
Q5.	The instrument used to measure various gases such as O_2, CO, NO_2 and SO_x.
Option A:	Power analyzer
Option B:	Combustion Gas analyzer
Option C:	Fyrite
Option D:	Pyrometer
Q6.	Non-contact type measurement of temperature is obtained by
Option A:	Infrared Thermometer

Option B:	Resistance Thermometer
Option C:	Manometer
Option D:	Lux meter
Q7.	Lux meter is used for
Option A:	Measurement of Illumination Level
Option B:	Measurement of Flow
Option C:	Measurement of Level
Option D:	Measurement of Temperature
Q8.	Simple payback period for a motor costing Rs.60 lakhs and with annual operational charges Rs.5 lakhs is expected to save Rs. 20 lakhs by reducing energy, is
Option A:	5 years
Option B:	4 years
Option C:	3 years
Option D:	2 years
Q9.	If speed of pump is doubled, power goes up by
Option A:	2 times
Option B:	6 times
Option C:	4 times
Option D:	8 times
Q10.	Electrical energy meter for LT residential consumers records the amount of
Option A:	Consumed Electrical power
Option B:	Consumed electrical Energy
Option C:	System voltage
Option D:	Used resistance
Q11.	The power factor indicated in HT electricity bill is
Option A:	Peak day pf
Option B:	Pf during night
Option C:	Average pf
Option D:	Instantaneous pf
Q12.	Tariff structure for residential consumers does not include
Option A:	Fixed Charges
Option B:	Wheeling Charges
Option C:	Energy Charge
Option D:	PF Penalty charge
Q13.	Which one of the following statements is NOT true for the capacitors used for power factor improvement
Option A:	Capacitor bank is used up to 100 kVAr.
Option B:	Capacitor should be connected near the load

Option C:	Enclosure of capacitor bank should be earthed.
Option D:	Capacitor once switched off, some minimum period should be allowed before switching on again
Q14.	kVAr required to improve p.f. is calculated as
Option A:	kW(tan ø1-tan ø2)
Option B:	kW(cos ø1-cos ø2)
Option C:	kW(sin ø1-tan ø2)
Option D:	kW(sin ø1-sin ø2)
Q15.	Variable Speed drives operates on principle of
Option A:	Change in p.f.
Option B:	Change in Current
Option C:	Change in no. of poles
Option D:	Change in frequency
Q16.	To determine the pump efficiency, which three key parameters are required?
Option A:	Flow, volume and length
Option B:	Flow, Head and Power.
Option C:	Velocity, Force and Power.
Option D:	Temperature, Head and type of liquid.
Q17.	A 20 kW rated motor is drawing actual measured power of 14 kW. If the rated efficiency is 92%, Determine the % loading of the motor?
Option A:	52.10
Option B:	75
Option C:	82.30
Option D:	64.40
Q18.	Which of the following statements is false regarding wind turbine?
Option A:	wind power does not vary as the cross-sectional area of the rotor
Option B:	wind power varies as cube of wind velocity
Option C:	cut-in wind speed is always less than rated wind speed
Option D:	theoretical maximum amount of energy in the wind that can be collected by wind turbine rotor is about 95%
Q19.	In ECBC-compliant new building must have to show minimum energy savings of
Option A:	0.3
Option B:	0.25
Option C:	0.2
Option D:	0.15
Q20.	How much will be the wastage of fuel oil per year if a hole of 3mm on a pipeline carrying 7kg/sq.cm steam
Option A:	30KL
Option B:	27KL

Option C:	37KL
Option D:	33KL
Q21.	Which one is NOT the component of steam distribution system
Option A:	Valves
Option B:	Insulation
Option C:	Air vents
Option D:	Vapouriser
Q22.	Operating furnace at too high temperatures than optimum will NOT cause
Option A:	Carbonization
Option B:	De-carbonization
Option C:	Excessive oxidation
Option D:	Heat loss
Q23.	Select the wrong statement in case of steam trap
Option A:	Discharges condensate as soon as it is formed
Option B:	Capable of discharging air and other condensable gases
Option C:	Does not allow condensate to escape
Option D:	Does not allow steam to escape
Q24.	The difference in temperature between steam and condensate refers to the principle of operation of a
Option A:	Thermodynamic trap
Option B:	Thermostatic trap
Option C:	Orifice type trap
Option D:	Float trap
Q25.	Which of the following may not help in energy efficient furnace operation?
Option A:	Maintaining a positive draft inside the furnace
Option B:	Minimizing refractory losses
Option C:	Complete combustion with maximum excess air
Option D:	Use of ceramic fiber in batch type furnace

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	D
Q3.	B
Q4	D
Q5	B
Q6	A
Q7	A
Q8.	B
Q9.	D
Q10.	B
Q11.	C
Q12.	D
Q13.	A
Q14.	A

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Q15.	D
Q16.	B
Q17.	D
Q18.	A
Q19.	B
Q20.	D
Q21.	D
Q22.	A
Q23.	C
Q24.	B
Q25.	C