

MCQ Question Solving Session-2

Subject: Energy Conservation and
Management

Subject Code: 2181916

Prof. Krunal Khiraiya

21. An oil fired boiler operates at an excess air of 20%. If the stoichiometric air to fuel ratio is 14 and oil consumption is 200 kg per hour then the mass of flue gas leaving the boiler chimney in kg/hour would be

- a) 3560
- b) 3360
- c) 3460
- d) 3660

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24. In a heat exchanger, inlet and outlet temperatures of cooling water are 28°C & 33°C. The cooling water circulation is 200 litres /hr. The process fluid enters the heat exchanger at 60 °C and leaves at 45 °C. Find out the flow rate of the process fluid? (C_p of process fluid = 0.95)

- a) 70
- b) 631
- c) 63
- d) 570

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- b) energy consumption is reduced
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26. Assume project A has an IRR of 85% and NPV of Rs 15,000 and project B has an IRR of 25% and NPV of 200,000. Which project would you implement first if financing is available and project technical life is the same?

a) B

b) A

c) cannot be decided

d) question does not make sense

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- a) Carbon Emission Reduction
- b) Clean Environment Rating
- c) Certified Emission Reduction
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28. How much carbon emission will be reduced per year by replacing 60 Watt incandescent lamp with 15 Watt CFL Lamp, if emission per unit is 1 kg CO₂ per kWh and annual burning is 3000 hours?

- a) 45 ton
- b) 3 ton
- c) 0.135 ton
- d) 183 ton

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29. An energy audit as defined in the Energy Conservation Act 2001 does not include

- a) Action plan to reduce energy consumption
- b) Verification, monitoring and analysis of use of energy
- c) Submission of technical report with recommendations
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30. In the first two months the cumulative sum is 4 and 12 respectively. In each of the next two months $E_{\text{calculated}}$ is more than E_{actual} by 3. The energy savings at end of the fourth month would be

a) -6

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31. Which among the following can be best implemented through an ESCO (Energy Service Company) route:

- a) coal procurement contract for captive power plant
- b) energy efficient design of a municipal lighting system
- c) large Waste Heat Recovery System in a large process plant, where external financing is sought
- d) energy and mass balance study of a Steel Plant

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32. Statement not applicable to TOD (Time of the Day) in electricity tariff structure?

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- b) It is an incentive to maximize off-peak consumption
- c) It is an incentive to minimize peak time power draw from the grid by consumers
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- b) kg/ deg C.
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35. The four pillars of successful energy management are technical ability, monitoring system, top management support and _____

a) strategy plan

b) energy audit plan

c) quality plan

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- b) fuel switching may reduce energy efficiency
- c) fuel switching may reduce energy costs
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- a) lux meter
- b) ultrasonic flow meter
- c) infrared thermometer
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38. In a cogeneration system, with extraction condensing turbine, the highest heat rate is recorded when;

- a) maximum power output and maximum extraction to process
- b) maximum power output and normal extraction to process
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39. A bottoming cycle is one in which fuel is used for producing

- a) power primarily followed by byproduct heat output
- b) heat primarily followed by byproduct power output
- c) power, heat and refrigeration simultaneously
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a) radiation from flame

b) radiation from furnace walls

c) convection due to movement of hot gases over the stock

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Thank
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