

# MCQ Question Solving Session-4

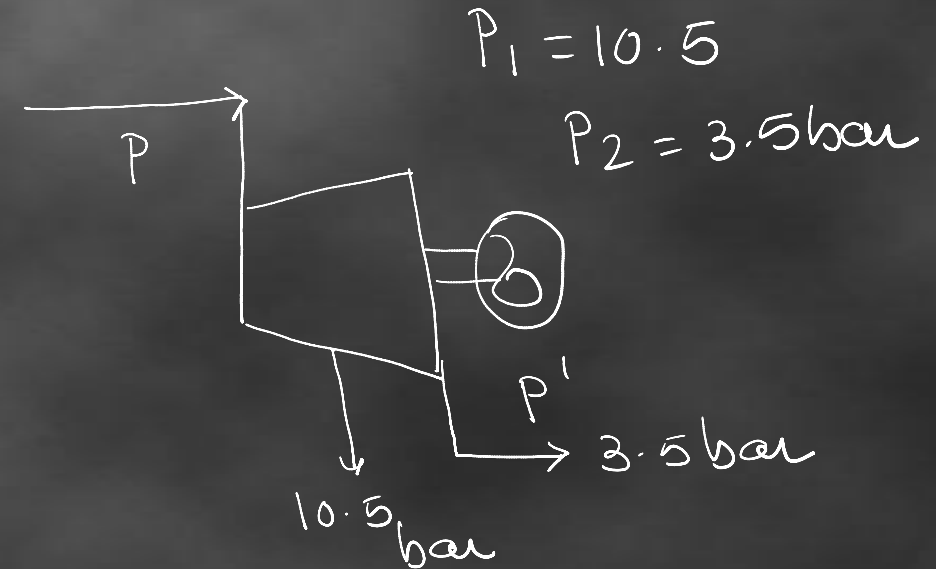
Subject: Energy Conservation and  
Management

Subject Code: 2181916

Prof. Krunal Khiraiya

41. A paper plant needs steam at 3.5 bar and 10.5 bar in addition to electric power. The most suitable choice among the following will be

- a) condensing turbine
- b) bottoming cycle
- c) back pressure turbine
- d) extraction cum back pressure turbine



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42. A power utility distributed 1 million 15 Watt CFLs for Rs 15 million, replacing 60 Watt incandescent lamps under Bachat Lamp Yojna. What will be the drop in power in the evening on the demand side, if 80% of the lights are on at that time, assuming similar numbers of incandescent lamps were switched on during the same period?

a) 360 kW

b) 12 MW

c) 36 MW

d) 60 MW

$$\text{No. of lamp Replace} = 10^6$$

$$\begin{aligned} \text{Diff of Watt Capacity} &= 60 - 15 \\ &= 45 \text{ W} \end{aligned}$$

$$\begin{aligned} \text{Total saving achieved} \\ 36 \text{ MW} &= 45 \times 10^6 \text{ W} \\ &= 45 \times 10^6 \times 0.8 \text{ W} \\ &= 36 \times 10^6 \text{ W} \end{aligned}$$

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43. Which of the following with respect to fossil fuels is true?

- a) Reserve / Production (R/P) ratio is a constant once established ✗
- b) R/P ratio varies every year with only changes in production ✗
- c) R/P ratio varies every year with only changes in reserves ✗
- d) R/P ratio varies every year with changes in both production and reserves ✓



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44. Consider two competitive projects A and B each entailing investment of Rs.85,000/- . Project A returns Rs.50,000 at the end of each year, but Project B returns Rs.115,000 at the end of Year 2. Which project is superior? <sup>↑</sup> Profit

- a) project A since it starts earning by end of first year itself and recovers cost before end of two years
- b) project B since it offers higher return before end of two years
- c) both projects are equal in rank ✓
- d) insufficient information to assess the superiority

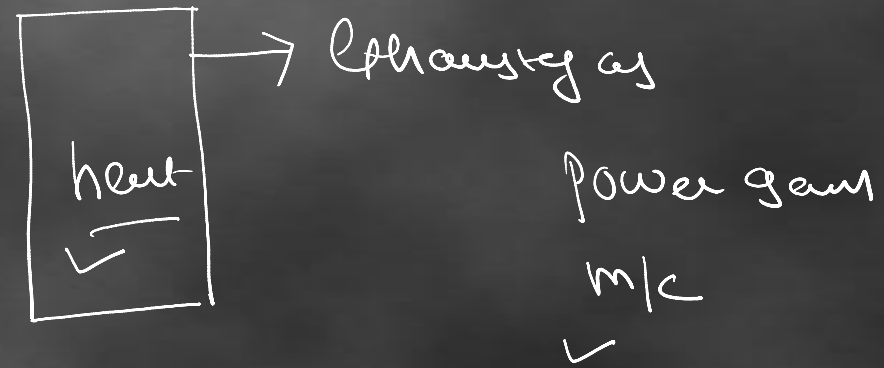


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- a) Topping cycle
- b) Tri-generation
- c) Bottoming cycle ✓
- d) none of the above



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46. \_\_\_\_\_ is a statistical technique which determines and quantifies the relationship between variables and enables standard equations to be established for energy consumption.

- a) linear regression analysis ✓
- b) time-dependent energy analysis
- c) moving annual total
- d) CUSUM

CUSUM

Produce, Demand

$$y = m x + c$$

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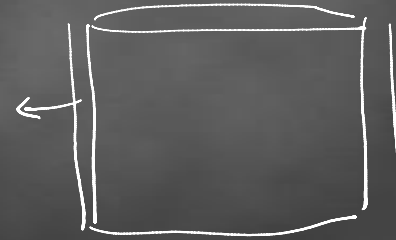
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a) emissivity ✓

b) coating thickness

c) conductivity

d) convective heat transfer coefficient



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48. The internal rate of return is the discount rate for which the NPV is

$$\begin{array}{l} \text{IRR} \rightarrow \text{NPV} = 0 \\ i = \textcircled{r} \end{array}$$

- a) positive
- b) zero
- c) negative
- d) less than 1

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49. Which of the following instrument is used for assessing combustion efficiency ?

a) lux Meter  $\Rightarrow$  light

b) pitot tube & manometer  $\Rightarrow$  velocity, pressure

c) ultrasonic flow meter  $\rightarrow$   $\phi$

d) fyrite  $\checkmark$



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- a) kW / kg of refrigerant used
- b) kcal / m<sup>3</sup> of chilled water
- c) BTU / Ton of Refrigeration
- d) kW / Ton of Refrigeration

VCRS → MIC  
(kW)

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51. A building intended to be used for commercial purpose will be required to follow Energy conservation building code under Energy Conservation Act, 2001 provided its

- a) connected load is 120 kW and above
- b) contract demand is 100 kVA and above
- c) connected load is 100 kW and above or contract demand is 120 kVA and above
- d) connected load is 500 kW and contract demand is 600 kVA

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- a) Fuel Consumption / GDP
- b) GDP/Fuel Consumption
- c) GDP/ Energy Consumption
- ✓ d) Energy Consumption / GDP

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- a) fully exploiting domestic energy resources
- b) diversifying energy supply source
- c) substitution of imported fuels for domestic fuels to the extent possible
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54. In project financing, sensitivity analysis is applied because

- a) almost all the cash flow methods involve uncertainty
- b) of the need to assess how sensitive the project to changes in input parameters
- c) what if one or more factors are different from what is predicted
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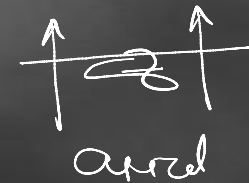
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- c) both diameter and length of the tube
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- a) Sedimentary rock containing solid bituminous materials
- b) Heavy black viscous oil combination of clay, sand, water and bitumen
- c) A form of naturally compressed peat
- d) combustible brownish-black sedimentary rock

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- a) Energy supply company
- b) Energy service company
- c) Energy standards company
- d) Energy sourcing company

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60. The essential elements of monitoring and targeting system is

a) Recording

b) Reporting

c) Controlling

d) All the above ✓

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Thank  
you

