ACE Engineering Academy

Hyderabad | Delhi | Bhopal |Pune | Bhubaneswar | Bengaluru |Lucknow | Patna | Chennai | Vijayawada | Visakhapatnam | Tirupati | Kukatpally| Kolkata

H.O: 204, II Floor, Rahman Plaza, Opp. Methodist School, Abids, Hyderabad-500001,

Ph: 040-23234418, 040-23234419, 040-23234420, 040 - 24750437

ESE- 2018 (Prelims) - Offline Test Series Test - 17

MECHANICAL ENGINEERING

SUBJECT: IC ENGINES, REFRIGERATION AND AIR CONDITIONING + POWER PLANT ENGINEERING + RENEWABLE SOURCES OF ENERGY – SOLUTIONS

01. Ans: (b)

Sol:

- Thermostatic expansion valve is a variable restriction type expansion device. In variable restriction type, the extent of opening or area of flow keeps on changing depending on the type of control.
- Automatic expansion valve is not suitable for varying load requirements. It increases the flow of liquid refrigerant into the evaporator when load decreases, and decreases the flow when an increase in load occurs.
- Capillary tube is a constant restriction type expansion device.

02. Ans: (b)

Sol: Degree of reaction of pure impulse turbine is zero.

$$R = \frac{\Delta h_{mb}}{\Delta h_{stage}}$$

where, Δh_{mb} = enthalpy drop in moving blade and Δh_{stage} = enthalpy drop in a stage

In pure impulse turbine entire enthalpy drop occurs in nozzle. There is no enthalpy drop in moving blades. Therefore, R = 0.

03. Ans: (b)

Sol: $CH_3NO_2 + x\,O_2 + 4xN_2 \rightarrow CO_2 + b\,H_2O + (4x+1)N_2$

H Balance - $3 = 2\,b \Rightarrow b = 1.5$

O Balance - $2x + 2 = 2 + b$

$\Rightarrow x = 0.75$

$$\text{Air fuel ratio} = \frac{0.75\times32+4\times0.75\times28}{61}$$

$$= \frac{24+21\times4}{61} = \frac{108}{61} = 1.77$$

04. Ans: (b)

Sol: $I_T = I_b r_b + I_d r_d + (I_b + I_d)\, r_r$

$$r_b = 0.6\ ,\ r_d = \frac{1+\cos 60^o}{2} = \frac{3}{4}$$

$$r_r = \rho\left(\frac{1-\cos\beta}{2}\right) = 0.2\left(\frac{1-\cos 60}{2}\right)$$

$$r_r = 0.2\times\frac{1}{4} = 0.05$$

$I_T = 1600 \times 0.6 + 400 \times 0.75 + (2000)\times 0.05$

$= 960 + 300 + 100$

$= 1360\ kJ/m^2h$

05. Ans: (a)

Sol:

- In a gas refrigeration system expander replaces throttle valve, because the drop in temperature by throttling a real gas is very small.
- For an ideal gas, enthalpy is a function of temperature only and since in throttling enthalpy remains unchanged, there would not be any change in temperature also.

06. Ans: (c)

Sol: Advantages of gas turbine plant are :

- Its Part load efficiency is low.
- It can be started and shut down easily
- It can meet peak demands
- Floor space is small because of its small size.

07. Ans: (b)

Sol: $r = \dfrac{V_S + V_C}{V_C}$

$$V_C = \frac{5}{100}(V_S)$$

$$V_C = \frac{V_S}{20}$$

$$\Rightarrow r = 1 + \frac{V_s}{V_C} = 1 + 20 = 21$$

08. Ans: (b)

Sol: For vapour absorption refrigeration system the ideal COP is given by

$$COP = \left(\frac{T_G - T_o}{T_G}\right)\left(\frac{T_R}{T_o - T_R}\right)$$

$T_G = 177 + 273 = 450$ K

$T_o = 17 + 273 = 290$ K

$T_R = -3 + 273 = 270$ K

$$COP = \frac{450-290}{450}\times\frac{270}{290-270}$$

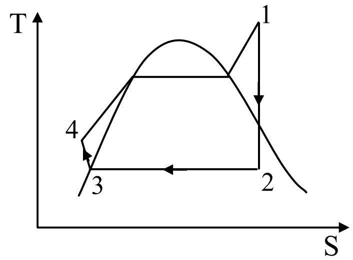
$$= \frac{160}{450}\times\frac{270}{20} = \frac{24}{5} = 4.8$$

09. Ans: (c)

Sol: Burning of biomass which are hydrocarbons produces carbon dioxide and water vapour. Fermentation of biomass produces ethanol. Bio refining of biomass produces fuel which are bio diesel.

10. Ans: (b)

Sol:



$h_1 = 3400$ kJ/kg, $h_2 = 2300$ kJ/kg

Heat rejected, $Q_{rej} = 2100$ kJ/kg,

$W_T = h_1 - h_2 = 3400 - 2300$ kJ/kg

$= 1100$ kJ/kg

Heat supplied $Q_{sup} = Q_{rej} + W_T$

$= 2100 + 1100 = 3200$ kJ/kg

$$\eta_{th} = \frac{1100}{3200} = 34.4\%$$

11. Ans: (d)

Sol: Ericsson cycle has higher thermal efficiency than otto cycle for same temperature limits. Stirling cycle and Carnot cycle has same efficiency for same temperature limits.

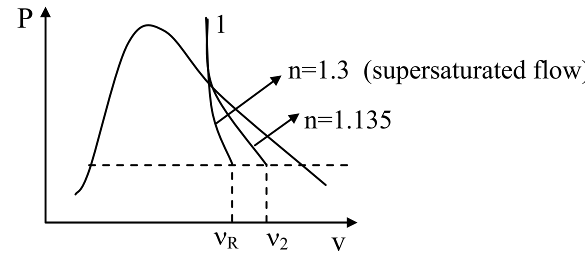
12. Ans: (c)

Sol:

- Ammonia attacks copper and copper bearing materials
- Iron and steel are found suitable for use with ammonia

13. Ans: (a)

Sol:



(i) ν_R = specific volume at exit with supersaturated flow.

ν_2 = specific volume at exit with isentropic flow

From the figure we can see that

$\nu_R < \nu_2$

(ii) Mass flow rate with supersaturated flow,

$$m_{sup} = \frac{A_1\overline{V}_{sup}}{\nu_R}$$

Mass flow rate with isentropic flow,

$$m = \frac{A\overline{V}_2}{\nu_2}$$

$$\overline{V}_{sup} \approx \overline{V}_2$$

$\Rightarrow m_{sup} > m \quad (\because \nu_R < \nu_2)$

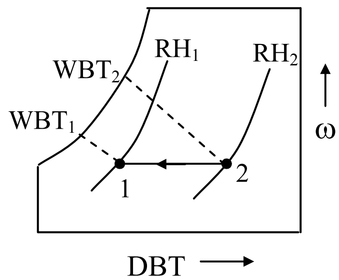
$\therefore$ Statement 1 and 2 are correct.

14. Ans: (d)

Sol: Lubricant properties should not change much with temperature. At high speed, viscosity should be high to avoid wear.

15. Ans: (d)

Sol:



$(WBT)_2 > (WBT)_1$

$(RH)_2 < (RH)_1$

We can see from the figure, that wet bulb temperature increases and relative humidity decreases.

16. Ans: (a)

Sol: $\mu = \frac{\omega}{\omega_S} = 0.5$

$\omega = 0.5\times0.022 = 0.011$ kg/kg d.a

Specific heat of moist air is,

$C_{pm} = C_p + \omega\, C_{pv}$

$C_{pm} = 1+0.011\times1.9$

$C_{pm} = 1.0209$ kJ/kgK

17. Ans: (b)

Sol: With a less cetane number self ignition temperature increases. Hence ignition delay increases which tends to increases the knock. Exhaust gas emission will be increased as more fuel will be exhausted before overall combustion occurs.

18. Ans: (b)

Sol: Convective superheater is often termed as primary superheater, where saturated steam from drum is admitted. After convective superheater steam enters radiant superheater which is placed in the radiant zone of the furnace near water-wall to absorb heat by radiation. Steam then enters the pendant superheater. Its a combined superheater in a sense that it receives heat partly by convection and partly by radiation.

19. Ans: (b)

Sol: Decrease in inlet temperature of coolant increases the absorption of energy from the combustion chamber walls. It will decrease the wall temperature which tends to decrease the tendency to knock. Increase in speed of the engine increases the turbulence which decreases the knocking tendency. Dilution of charge with inert gas reduces the flame speed which increases the knocking tendency.

20. Ans: (c)

Sol: $h = C_p.\, t + \omega(2500+1.88t)$

$h = 1\times25+0.02(2500+1.88\times25)$

$h = 75.94$ kJ/kg of dry air

21 Ans: (b)

22. Ans: (c)

Sol: Locomotive boiler, Lancashire and scotch marine boilers are fire tube boilers.

23. Ans: (c)

Sol: P = VI

= 220 × 51

$$\text{Engine power} = \frac{P_{\text{dynometer}}}{\eta_{\text{dynometer}}}$$

$$= \frac{220 \times 51}{0.85}$$

= 220 × 60 = 13.2 kW

24. Ans: (d)

Sol: An air washer can achieve

1. Cooling and dehumidification when, T_w < dew point temperature (DPT)
2. Heating and humidification, $T_w > DBT$
3. Adiabatic saturation, $T_w = WBT$
4. Cooling and humidification,

$$WBT < T_w < DBT$$

WBT→ wet bulb temperature

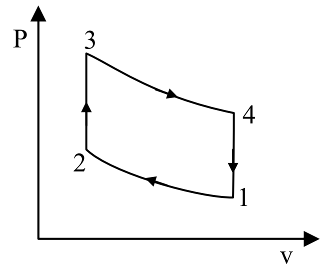
$T_w \rightarrow$ water temperature

DBT→ dry bulb temperature.

Heating and humidification can only be achieved with chemical like silica gel, alumina, where it absorbs moisture from air and release latent heat.

25. Ans: (a)

Sol:



Combustion in SI engine is a constant volume process

$$P_3 = P_2 \times \frac{T_3}{T_2} = 1950 \times \frac{1800}{650} = 5400 \text{ kPa}$$

$$\frac{P_4 \times V_4}{T_4} = \frac{P_3 \times V_3}{T_3} \quad [\because PV = mRT]$$

$$\Rightarrow P_4 = P_3\left(\frac{T_4}{T_3}\right) \times \left(\frac{V_3}{V_4}\right)$$

$$= 5400 \times \left(\frac{750}{1800}\right) \times \frac{1}{9} = 250 \text{ kPa}$$

26. Ans: (a)

Sol: If swirl component at inlet is zero, then the inlet velocity is axial

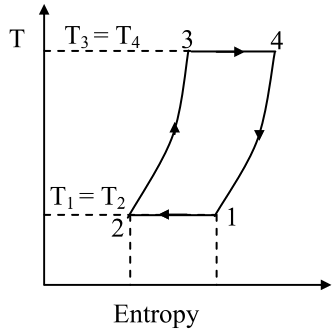
Given, blade speed, u = 300 m/s,

Slip factor $\phi = 0.92$,

$\therefore W = \phi u^2 = 0.92 \times (300)^2 = 82.8$ kJ/kg

27. Ans: (c)

Sol:



$$q_h = c_v(T_3 - T_2)$$

Given, $T_3 = 1000°C$, $T_2 = T_1 = 50°C$

$q_h = 0.717\ (1273 - 323)$

$= 0.717 \times 950$

$= 7.17 \times 95 = 681.15$ kJ/kg

28. Ans: (b)

Sol: *Bootstrap system:*

(i) Is suitable for high speed aircraft flying at high altitude

(ii) Is not suitable for ground cooling

(iii) Temperature rise due to ram effect is considered.

29. Ans: (a)

Sol:

- Backward curved blades when compared to radial and forward curved blades
  - have better efficiency
  - are stable over a wide range of flows
- Forward curve blades give highest pressure ratio

30. Ans: (d)

Sol: $P = 2\pi NT$

$$= 2 \times \frac{22}{7} \times \frac{900}{60} \times 70 \quad (\text{assuming } \pi = \frac{22}{7})$$

$= 600 \times 11 = 6600$ W $= 6.6$ kW

$$\dot{m}_c = \left(\frac{0.11}{4} \text{kg/min} \times 1000\text{g/kg} \times 60 \text{min/hr}\right)$$

$$= \frac{6600}{4} \text{gm/hr}$$

$$\text{bsfc} = \frac{\frac{6600}{4}}{6.6} = \frac{1000}{4} = 250 \text{gm/kWhr}$$

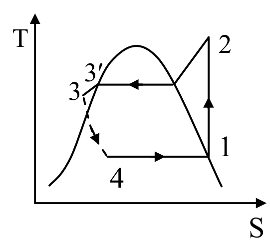
31. Ans: (d)

Sol: V Engines are cylinders which are angle between their axis about the crankshaft.

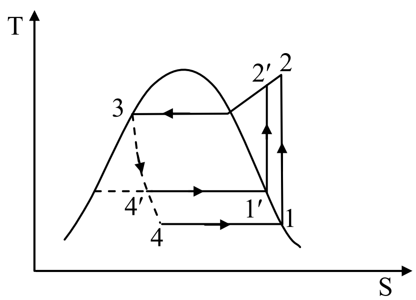
32. Ans: (b)

Sol:

- No effect on volumetric efficiency due to sub cooling



$3' - 3 \Rightarrow$ sub cooling process



If inlet pressure to compressor increases from 1 to 1′.

- Refrigerating effect ↑
- Compressor input ↓
- COP ↑

33. Ans: (d)

Sol: The advantages of multistage compression in reciprocating compressor are:

1. Improved overall efficiency
2. Reduction in work required per stroke
3. Leakage losses are reduced
4. Size and strength of cylinder can be adjusted to suit volume and pressure of gas
5. Multi-cylinder gives uniform torque and better mechanical balance

34. Ans: (d)

Sol: A catalytic converter consists of a stainless steel cover and alumina inside it. Alumina contains 3 types of catalyst

(1) Rhodium (R_h) → used for increasing the rate of reducing No_x

(2) Platinum (P_f) → used to convert HC to H_2O & CO_2

(3) Palladium (P_a) → used to convert CO to CO_2

35. Ans: (c)

Sol: $\rho_a = 1.18 \text{ kg/m}^3$

$V_d = 100 \text{ cm}^3$

$\eta_v = 0.75$

N = 8000 rpm

$$\dot{m}_a = \rho_a V_d \eta N$$

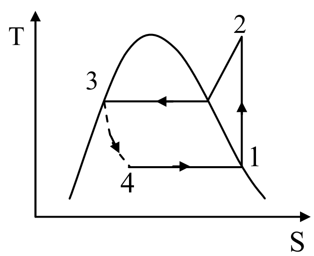
$$= 1.18 \times 100 \times 10^{-6} \times 0.75 \times \frac{8000}{60}$$

$$= 1.18 \times 10^{-4} \times \frac{75 \times 8}{6}$$

$$= 11.8 \times 10^{-3} \text{ kg/sec} = 11.8 \text{ gm/sec}$$

36. Ans: (d)

Sol:



$$\text{COP} = \frac{\text{desired effect}}{\text{energy input}} = \frac{h_1 - h_4}{h_2 - h_1}$$

$$= \frac{1450 - 350}{1750 - 1450}$$

$$\text{COP} = \frac{1100}{300} = 3.67$$

$$\text{Carnot COP} = \frac{T_L}{T_H - T_L}$$

$$= \frac{(-13 + 273)}{(37 + 273) - (-13 + 273)} = 5.2$$

$$\text{Second law efficiency } (\eta_{II}) = \frac{(\text{COP})_{\text{actual}}}{(\text{COP})_{\text{Carnot}}}$$

$$= \frac{3.67}{5.2} = 70.6\%$$

37. Ans: (b)

Sol: Incidence loss occurs due to off design condition. The relative velocity at inlet does not match with the blade angle. Fluid cannot enter the blade smoothly and energy loss occurs.

38. Ans: (a)

Sol: Compression ratio for petrol will be around 5 to 10 and for diesel engine it is around 15 to 20.

39. Ans: (c)

Sol:

- Halide torch method is used to defect the leak for fluorocarbon
- R134a is an environment friendly refrigerant because there is no chlorine atom in it.

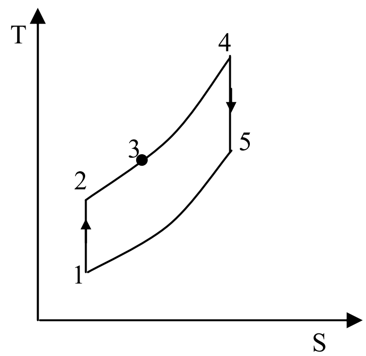
  Chemical formula of R134a is $C_2H_2F_4$.
- Soap-bubble method is used to detect the leak for ammonia as a refrigerant

40. Ans: (c)

Sol: Planimeter is used to find the area of arbitrary two dimensional figures. When pressure and volume state is drawn on the P-V cycle diagram, Indicated Power is calculated using planimeter.

41. Ans: (b)

Sol:



$$\in = \frac{T_3 - T_2}{T_5 - T_2}$$

$$0.70 = \frac{T_3 - 500}{720 - 500}$$

$$T_3 = 654\text{K}$$

$$\eta = \frac{(T_4 - T_5) - (T_2 - T_1)}{(T_4 - T_3)}$$

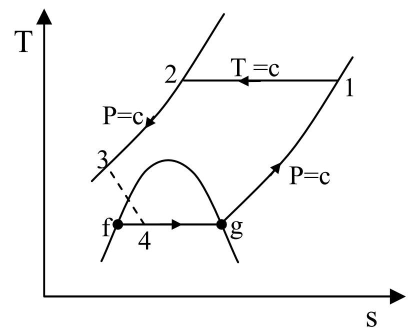
$$= \frac{(1200 - 720) - (500 - 300)}{(1200 - 654)} = 51.2\ \%$$

42. Ans: (c)

Sol: Exhaust valve should close slightly after the exhaust stroke to reduce the Exhaust gas in the cylinder during intake process.

43. Ans: (b)

Sol: Linde-Hampson process for gas liquefaction process gas is compressed isothermally.



44. Ans: (b)

Sol: Friction power is calculated in Morse test thus having indicated power and brake power mechanical efficiency is calculated.

45. Ans: (b)

Sol: $\eta_v = 1 + c - c\left(\frac{P_2}{P_1}\right)^{\frac{1}{n}}$

If $\eta_v = 0$

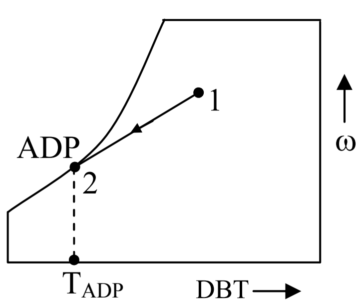
$$\therefore c = \frac{1}{\left(\frac{P_2}{P_1}\right)^{\frac{1}{n}} - 1}$$

46. Ans: (c)

Sol: Carbon monoxide and fluorine are non green house gases. nitrous oxide , methane carbon dioxide, hydro fluorine carbons are green house gases.

47. Ans: (a)

Sol: In a cooling and dehumidification process, the temperature at which the room sensible heat factor line intersects the saturation temperature is called room apparatus dew point temperature.



48. Ans: (c)

Sol: Sun position is function of latitude (ϕ), hour angle (ω) and declination angle (δ)

49. Ans: (b)

Sol: Degree of reaction, $R = \frac{(\Delta h)_{mb}}{(\Delta h)_{mb} + (\Delta h)_{fb}}$

Δh_{mb} = enthalpy drop in moving blade,

Δh_{fb} = enthalpy drop in fixed blade,

Given, Δh_{mb} = 9 kJ/kg ,

Δh_{fb} = 11 kJ/kg

$$R = \frac{(\Delta h)_{mb}}{(\Delta h)_{mb} + (\Delta h)_{fb}}$$

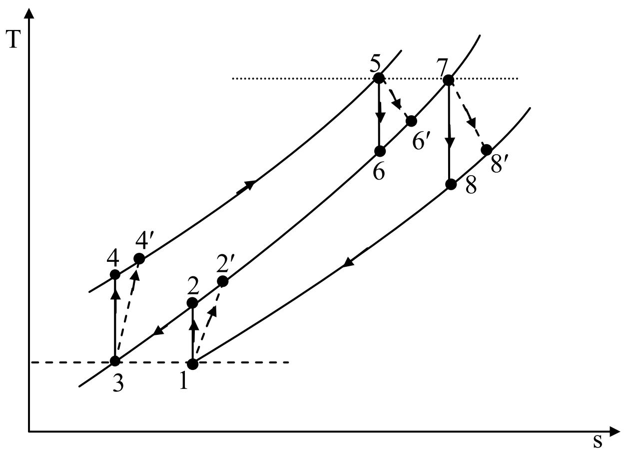
$$= \frac{9}{9+11} = \frac{9}{20} = 0.45$$

50. Ans: (a)

Sol: Fossil fuels involves burning of hydrocarbons, these fuels are conventional sources. Fuel cells, thermionic converter and biomass are non conventional energy sources.

51. Ans: (d)

Sol:



Work capacity, $W_{net} = W_T - W_C$

$\Rightarrow W_T = c_p\,[(T_5 - T_{6'}) - (T_7 - T_{8'})]$

$$\Rightarrow W_T = c_p\left[\eta_T T_5\left(1-\frac{1}{(r_p)^{\frac{\gamma-1}{\gamma}}}\right)+\eta_T\,T_7\left(1-\frac{1}{(r_p)^{\frac{\gamma-1}{\gamma}}}\right)\right]$$

$[\because T_5 - T_{6'} = \eta_T\,(T_5 - T_6)$

$T_7 - T_{8'} = \eta_T\,(T_7 - T_8)$

and $\frac{T_5}{T_6} = \frac{T_7}{T_8} = (r_p)^{\frac{\gamma-1}{\gamma}}$]

$$= 2\,c_p\,\eta_T T_{max}\left(1-\left(\frac{1}{r_p}\right)^{\frac{\gamma-1}{\gamma}}\right)$$

$[\because T_5 = T_7 = T_{max}]$

$W_c = c_p\left[(T_{2'} - T_1) + (T_{4'} - T_3)\right]$

$[\because (T_{2'} - T_1) = \frac{(T_2 - T_1)}{\eta_c}$ and $\frac{T_2}{T_1} = \frac{T_4}{T_3} = (r_p)^{\frac{\gamma-1}{\gamma}}$]

$$W_c = 2c_p\,\frac{T_{min}}{\eta_c}\left[(r_p)^{\frac{\gamma-1}{\gamma}} - 1\right]$$

$W_{net} = W_T - W_C$

$$= 2\,c_p\left[\eta_T T_{max}\left(1-\left(\frac{1}{r_p}\right)^{\frac{\gamma-1}{\gamma}}\right)-\frac{T_{min}}{\eta_c}\left((r_p)^{\frac{\gamma-1}{\gamma}}-1\right)\right]$$

On differentiating W_{net} w.r.t. r_p

$$\frac{d\,W_{net}}{d\,r_p} = 0$$

We get , $(r_p) = \left(\eta_c\,\eta_T\,\frac{T_{max}}{T_{min}}\right)^{\frac{\gamma}{2(\gamma-1)}}$

52. Ans: (b)

Sol: Wind energy does not involves emission of any harmful gases.

53. Ans: (a)

Sol: *Presence of air inside condenser*

- reduces heat transfer coefficient
- reduces condenser vacuum and increases turbine exhaust pressure
- reduces turbine output

54. Ans: (d)

Sol: It utilizes both the beam and diffused radiation. Heat losses by convection and radiation are higher because of larger area for same power output.

55. Ans: (c)

Sol: Flight velocity = u ,

Jet velocity = v

Thrust power= $m_a(v-u)u$

Propulsive power = $m_a\left(\frac{v^2-u^2}{2}\right)$

Propulsive efficiency = $\frac{\text{thrust power}}{\text{propulsive power}}$

$$= \frac{m_a(v-u)u}{\frac{m_a}{2}(v^2-u^2)} = \frac{2(v-u)u}{(v+u)(v-u)} = \frac{2u}{(v+u)}$$

56. Ans: (a)

Sol: $P_{max} = I_{SCC}\, V_{OCV}\, FF$

$$= 2.1 \times 50 \times 10^{-3} \times \frac{60}{100}$$

$$= 6.3 \text{ mW}$$

57. Ans: (c)

58. Ans: (b)

Sol: $P = c_p \frac{1}{2} \rho A u_o^3$

$$11.8\times 10^3 = 0.593 \times \frac{1}{2} \times 1.25\times A\times (20)^3$$

$$11.8\times10^3 = A \times 0.593 \times \frac{1}{2} \times 1.25 \times 8000$$

$$11.8 \times10^3 = \frac{A\times0.593\times10^4}{2}$$

$$\Rightarrow A = 4 \text{ m}^2$$

59. Ans: (c)

Sol: Total Heat Load = THL = 10 kJ/min

Sensible Heat Factor = SHF = 0.85

$$SHF = \frac{SHL}{THL}$$

$$0.85 = \frac{SHL}{10}\ ;$$

SHL = 8.5 kJ/min

SHL + LHL = THL

8.5 + LHL = 10

LHL = 10 – 8.5 = 1.5 kJ/min

60. Ans: (c)

Sol: $\frac{P_{avg}}{A} = 0.225 \times \left(R^2 - r^2\right)$

$P_{avg} = 0.225 \times 5 \times (15^2 - 3^2)$

$= 0.225 \times 5 \times 18 \times 12$

$= 90 \times 2.7 = 243$ MW

61. Ans: (d)

Sol:

- *Ericsson cycle :* two constant pressure processes and two isothermal processes
- *Atkinson cycle :* two isentropic processes, one constant volume process and one constant pressure process.
- *Lenoir cycle :* One constant pressure process, one constant volume process and one isentropic process.
- *Reversed Stirling cycle:* two constant volume processes and two isothermal processes.

62. Ans: (a)

Sol: Circulation ratio, $CR = \frac{m}{m_g}$

Where, m = flow rate of water in downcomer

m_g = flow rate of steam released from drum

Circulation ratio in any tube should not be less than 6 i.e., at least kg of saturated water must circulated in the downcomer-riser circuit for each kg of steam released. Too much steaming is not desired in riser tube and CR need to be maintained above 6.

63. Ans: (b)

Sol:

- In cooling tower water is cooled by evaporative cooling, since latent heat of evaporator is taken from water itself.
- Minimum temperature to which water can be cooled is wet bulb temperature. At this temperature air is 100 % saturated and cannot absorb any more water vapour. Hence no further evaporation and cooling.
- Water practically never reaches wet bulb temperature. This would require cooling tower of very large height.

64. Ans: (a)

Sol: In evaporator saturated water converts to saturated vapour by taking latent heat of vaporisation. At critical pressure, latent heat of vaporization is zero and liquid suddenly flashes to vapour. Therefore, for boilers operating above critical pressure liquid suddenly flashes to vapour and evaporator is not required.

65. Ans: (d)

Sol: By pass factor increases with increase in air velocity because time available to air for heat transfer reduces.

66. Ans: (b)

Sol:

- In summer, temperature difference between body and surrounding is less. Thus convective and radiative heat losses are reduced. To maintain thermal equilibrium body starts perspiring to increase evaporative loss.
- In winter, temperature difference between body and surrounding increases. Thus sensible heat transfer (convective and radiative) increases and evaporative losses (heat loss by perspiration) tend towards zero.

67. Ans: (b)

Sol:

- If water surface temperature (T_s) > Dry bulb temperature of air (T_a), the process is heating and humidification.
- If $T_s = T_a$, the process is humidification.
- If $T_s < T_a$, the process is cooling and humidification.

68. Ans: (b)

Sol: $Q_{gen} = Q_{skin} + Q_{res} + Q_{stored}$

$Q_{gen} = M =$ Metabolic activity

$Q_{skin} = \pm Q_{conv} \pm Q_{rad} + Q_{evap}$

For neutral condition or comfort the heat stored in a body should be zero

$Q_{stored} = 0$

69. Ans: (c)

Sol: In lean mixture flame speed is slow and combustion lasts well past Top dead centre. This keeps pressure high in the power stroke. Mean effective pressure may or may not increase with flame speed. For example, during idling though it is running on rich mixture which has high flame speed its Mean effective pressure is lower.

70. Ans: (c)

Sol: Compression ratio of CI engine need not be altered when equipped with turbocharger.

Brake power will be increased for a compression ignition engine when equipped with turbocharger as density of inlet air increases which increases the net power in CI engine.

71. Ans: (a)

Sol: Angle of tilt changes the solar angle which has uneven heating effect on the air which is responsible for season change.

72. Ans: (a)

Sol: It needs a yaw mechanism to face the wind direction for maximum power.

73. Ans: (a)

Sol: In double basin tidal system, head is maintained constant during high tides and low tides. Single basin system works on either single ebb cycle system or single tide cycle system.

74. Ans: (b)

Sol: If length of the engine size is high flame has to travel longer. So tendency to knock is high as there is an ignition delay. L/D ratio is reduced to decrease the knocking tendency.

75. Ans: (b)

Sol:

- Efficiency of single stage impulse turbine decreases $\eta = \cos^2\alpha$

  As, α increases , η decreases
- Nozzle angle generally used in impulse turbine is in the range 16-22°.
- Too low an angle may cause increased energy loss at blade inlet.


GATE TOPPERS
GATE 2017
1 EC PRAMOD
1 ME SUDHEER
1 ME HASAN ASIF
1 EE SHIVAM SINGH
1 CE MRIDUL RAKESH
1 CS DEVAL N PATEL
1 IN NAVEEN
2 EC SREE KALYANI
2 CE PUNEET KHANNA
2 IN RAHUL MAHATO
2 IN SHUBHAM BANSAL
2 PI GAURAV DHAUDIYAL
3 EC KARUN
3 EE RAVI TEJA
3 ME PRADIP BOBADE
3 CS RAVI SHANKAR
3 CE ANKUR TRIPATHI
4 EC SONU SHARMA
4 EE SARFRAJ NAWAZ
4 CE CHIRAG MITTAL
4 ME GAUSH ALAM
4 IN MONTI
4 PI Sanghamitra Adhikari
5 IN VRAJESH SHAH
5 PI ANKIT TIWARI
6 EC LIKHITA SAI UPPU
6 CS MEGHASHAYAM
6 EE RAJASEKHAR REDDY
6 IN RAMESH KAMULLA
6 PI PINAL KUMAR RANA
7 IN PANKAJ MISHRA
8 ME DIVYANSHU JHA
8 PI
9 EC Anand Uppada
9 CS
9 ME DHRUV KUMAR JHA
10 EC AMIT RAWAT
10 ME
10 EE SURAJ DASH
10 IN
10 IN
ESE TOPPERS
ESE 2017
CE
1 CE NAMIT JAIN
2 CE PRAVIND SINGH
3 CE ANKIT
6 CE RISHABH DANGAYACH
8 CE ADITYA SINGH
9 CE HIMANSHU GAUTAM
10 CE AYUSH DUBEY
7 IN TOP 10 RANKS
7 All India 1st Rank in ESE.
E&T
2 E&T SUDHANSHU CHAUDHARY
3 E&T
5 E&T AMIT GAUTAM
6 E&T SUBHRANGINI MISHRA
7 E&T DEVADURGAM PAVAN KUMAR
8 E&T DEEPALI GOYAL
9 E&T ABHISHEK PRATAP SINGH
10 E&T UMESH
8 IN TOP 10 RANKS
EE
2 EE PREETI KUMARI
3 EE
4 EE HARSHIT KUMAR SINGH
5 EE NIKHIL KUMAR
6 EE DUSHYANT SINGH
8 EE APOORVA GUPTA
9 EE KIRAN BABU KONERU
7 IN TOP 10 RANKS
and many more...
ME
3 ME SAURABH
4 ME AMIT KUMAR RAI
6 ME ANKAN GUPTA
7 ME DHRUW JHA
9 ME ACHARAJ GUPTA
5 IN TOP 10 RANKS
27 Ranks in Top 10 in ESE-2017
ACE Engineering Academy
Leading Institute for ESE/GATE/PSUs
204, Rahman Plaza, Abids, Hyderabad Ph : 040-23234418/19/20