- What is the thermal velocity of 2” diameter aluminium sphere falling in air? Assume that sphere has coefficient of drag of 0.5, the density of aluminum is 5.12 slug/ft3, and the density of air is 0.00234 slug/ft3.

A. 100 ft/sec
B. 177 ft/sec
C. 350 ft/sec
D. 1000 ft/sec

In the real flow of air around a cylinder, the circulation is calculated to be 42.74 fl/sec. If the free steam velocity is 100 ft/sec, what is the lift generated per foot of the cylinder?

A. 10 lbf/ft
B. 42.74 lbf/ft
C. 120 lbf/ft
D. 322 lbf/ft

The 5” diameter cylinder shown below rotates at 3600 revolutions per minute. Air is flowing past the cylinder at 100 ft/sec. How much is lift on the cylinder per unit length? The density of air is 0.00234 slug/ft3?

A. 23.65 lbf/ft
B. 1.25 lbf/ft
C. 11.75 lbf/ft
D. 20.75 lbf/ft

- A pump produces a head of 30 feet. The volumetric flow rate is 10 gallon per minute. The fluid pumped is oil with a specific gravity of 0.83. How much energy does the pump consume in one hour?

A. 8.7 kJ
B. 17.2 kJ
C. 168.9 kJ
D. 203.6 kJ

- The pressure drop across a turbine is 30 psi. The flow rate is 60 gallons per minute. Calculate the power output of the turbine.

A. 0.41 hp
B. 1.05 hp
C. 2.54 hp
D. 6.30 hp

- A pump has efficiency of 65%/ It is driven by a 0.75 horsepower motor. The pump produces a pressure rise of 120 Pa in water. What is required flow rate?

A. 3.03 m3/s
B. 4.04 m3/s
C. 4.55 m3/s
D. 4.66 m3/s

- If air is at a pressure, p , of 3200 lbf/ft2, and at at temperature, T, of 800R, what is specific volume, v? (R=53.3 ft-lbf.lbm-R, and air can modeled as an ideal gas)

A. 9.8 ft3/lbm
B. 11.2 ft3/lbm
C. 13.3 ft3/lbm
D. 14.2 ft3/lbm

- Steam at 1000 lbf/ft2 pressure and 300 R has a specific enthalpy of 98000 lbf-ft/lbm. Find the internal energy per pound mass of steam.

A. 2500 lbf-ft/lbm
B. 3300 lbf-ft/lbm
C. 5400 lbf-ft/lbm
D. 6900 lbf-ft/lbm

- 3.0 lbm of air are contained at 25 psia and 100F. Given that Rair=53.35 ft-lbf/lbm-F, what is the volume of the container?

A. 10.7 ft3
B. 14.7 ft3
C. 15 ft3
D. 24.9 ft3

- From the steam tables, determine the average constant pressure specific (cp) of steam at 10 kPa and 45.8C.

A. 1.79 kJ/kg C
B. 10.28 kJ/kg C
C. 30.57 kJ/kg C
D. 100.1 kJ/kg C

- A 10 m3 vessel initially contains 5m3 of liquid water and 5m3 of saturated water vapor at 100kPa. Calculate the internal energy of the system using steam tables.

A. 5x10^5 kJ
B. 8x10^5 kJ
C. 1x10^6 kJ
D. 2x10^6 kJ

- A vessel with a volume of 1 cubic meter contains liquid water and water vapor equilibrium at 600kPa. The liquid water has a mass of 1 kg. Using steam tables, calculate the mass of the water vapor.

A. 0.99 kg
B. 1.57 kg
C. 3.16 kg
D. 2.54 kg

- Calculate the entophy of steam at 60 psia w/ a quality of 0.6.

  A. 0.4274 BTU/lbm-R
  B. 0.7303 BTU/lbm-R
  C. 1.1577 BTU/lbm-R
  D. 1.2172 BTU/lbm-R

- If a 1lbm of steam 14.7 psia, 63% quality is heated isentropically, at what pressure will it reach the saturated vapor state?

A. 56 psia
B. 313 psia
C. 1852 psia
D. 2585 psia

- The first law of thermodynamics is based on which of the following principles?

A. conversion of mass
B. the enthalpy-enthropy relationship
C. action - reaction
D. conversion of energy

- A 5m3 vessel initially contains 50 kg of liquid water and saturated water vapor at total internal energy of 27,300 kJ. Calculate the heat requirement to vaporize all of the liquid.

A. 100,000 kJ
B. 200,000 kJ
C. 300,000 kJ
D. 400,000 kJ

- Find the internal energy of 5lbm of oxygen gas when the temperature changes from 100F to 120F cv=0.157 BTU/lbmR.

A. 14.7 BTU
B. 15.7 BTU
C. 16.8 BTU
D. 147 BTU

- Water (specific heat cv=4.2 kJ/kg.K) is being heated by a 1500W heater. What is the rate of change in temperature of 1kg of the water?

A. 0.43 K/s
B. 0.179 K/s
C. 0.357 K/s
D. 1.50 K/s

- One kilogram of water (cv=4.2 kJ/kg K) is heated by 300 BTU of energy. What is the change in temperature, in K?

A. 17.9 K
B. 71.4 K
C. 73.8 K
D. 75.4 K

- Determne the change in enthalpy per lbm of nitrogen gas as its temperature changes from 500F to 200F. Cp=0.2483 BTU/lbm-R)

A. -74.49 BTU/lbm
B. -72.68 BTU/lbm
C. -68.47 BTU/lbm
D. 63.78 BTU/lbm

- What is the resulting pressure when one pound of air at 15 psia and 200F is heated at constant volume to 800F?

A. 15 psia
B. 28.6 psia
C. 36.4 psia
D. 52.1 psia

- What horsepower is required to isothermally compress 800ft3 of air per minute from 14.7 psia to 120 psia?

A. 28 hp
B. 108 hp
C. 256 hp
D. 13900 hp

- Calculate the work done by a steam in which 1 kgmole of water completely evaporates at 100C and atmosphere pressure.

A. 1000 kJ
B. 2130 kJ
C. 2490 kJ
D. 3050 kJ

- Twenty grams of oxygen (O2) are compressed at a constant temperature of 30C to 5% of their original volume. What is work done on the system?

A. 824 cal
B. 924 cal
C. 994 cal
D. 1124 cal

- Helium (R=0.4969 BTU/lbm R) is compressed isothermally from 14.7 psia and 68F. The compression ratio is 4. Calculate the work done by the gas.

A. -1454 BTU/lbm
B. -364 BTU/lbm
C. -187 BTU/lbm
D. 46.7 BTU/lbm

- Gas is enclosed in a cylinder with a weighted piston as the top boundary. The gas is heated and expands from a volume of 0.04m3 to 0.10m3 at a constant pressure of 200kPa. Calculate the work done by the system.

  A. 8 kJ
  B. 10 kJ
  C. 12 kJ
  D. 14 kJ

- A piston-cylinder system contains a gas which expands under a constant pressure 1200 lbf/ft2. If the piston is displace 12” during the process, and the piston diameter is 24”, what is the work done by the gas on the piston?

  A. 1768 ft-lbf
  B. 1890 ft-lbf
  C. 2387 ft-lbf
  D. 3768 ft-lbf

- Gas is enclosed in a cylinder with a weighted piston as the top boundary. The gas is heated and expands from a volume of 0.04m3 to 0.10m3. The pressure varies such that PV=constant, and the initial pressure is 200kPa. Calculate the work done by the system

A. 6.80 kJ
B. 7.33 kJ
C. 9.59 kJ
D. 12.0 kJ

- In an isentropic compression, p1=200psia, p2=300 psia,and T1 700R. Find T2 ɣ=1.4.

A. 576 R
B. 590 R
C. 680 R
D. 786 R

- Air undergoes an isentropic compression from 14.7 psia to 180.6 psia. If the initial temperature is 68F and the final temperature is 621.5F, calculate the work done by the gas.

A. -138.2 BTU/lbm
B. -94.8 BTU/lbm
C. 0 BTU/lbm
D. 94.8 BTU/lbm

- Nitrogen is expanded isentropically. Its temperature changes from 620F to 60F. Find the pressure ratio (p1/p2).

A. 0.08
B. 12.9
C. 26.2
D. 3547

- Nitrogen is expanded isentropically. Its temperature changes from 620F to 60F. The volumetric ratio is V2/V1=6.22, and the volume of the R for nitrogen is 0.0787 BTU/lbm-R. What is the work done by the gas?

  A. -1112.7 BTU/lbm
  B. -99.22 BTU/lbm
  C. 1112.7 BTU/lbm
  D. 99.22 BTU/lbm

- An isobaric steam generating process starts with saturated liquid at 20 psia. The change in entropy is equal to the initial entropy. What is the work done by the gas?

A. -230.4 BTU/lbm
B. 230.4 BTU/lbm
C. 0 BTU/lbm
D. 196.2 BTU/lbm

- A cylinder and a piston arrangement contains saturated water vapor at 110C. The vapor is compressed in a reversible adiabatic process until the pressure is 1.6 Mpa. Determine the work done by the system per kilogram of water.

  A. -637 kJ/kg
  B. -509 kJ/kg
  C. -432 kJ/kg
  D. -330 kJ/kg

- Helium is compressed isothermally from 14.7 psia and 68F. The compression ratio is 4.Calculate the change in entropy of the gas geven that Rhe=-0.4961 BTU/lbm-R.

A. -2.76 BTU/lbm-R
B. -0.689 BTU/lbm-R
C. 0 BTU/lbm-R
D. 0.689 BTU/lbm-R

- For An ideal gas, what is specific molar entropy change during an isothermal process in which the presuure changes from 200kPa to 150kPa

A. 2.00 j/mole.K
B. 2.39 j/mole.K
C. 2.79 j/mole.K
D. 3.12 j/mole.K

- 200 g of water are heated from 5C to 100C and vaporized at a constant pressure. The heat vaporization of water at 100C is 539.2 cal/g. The heat capacity at constant pressure, cp, is 1.0 cal/g K. determine the total change in entropy.

A. 248.2 cal/K
B. 298.2 cal/K
C. 348.0 cal/K
D. 398.2 cal/K

- A Carnot engine operates between 800R and 1000R. What is its thermal efficiency?

A. 20%
B. 30%
C. 40%
D. 50%

- A device produces 37.5 Joules per cycle. There is one stroke per cycle. Calculate the power output if the device is run at 45 rpm.

A. 4.69 W
B. 14.063 W
C. 28.125 W
D. 275.625 W

- A steam is generator produces saturated steam at 100 psia from saturated liquid at 14.7 psia. IF the heat source is a bath at 340F that provides 800 BTU/lbm, which of the following is true?

  A. the device cannot work because the pressure is greater than zero.
  B. the device can work,but is inefficient.
  C. the device violates the first law of thermodynamic
  D. the devices violates the second law of thermodynamic

- An engine burns a liter of fuel each 12minutes.The fuel has a specific gravity of 0.8, and aheatinf value of 45 MJ/kg. The engine ha s an efficiency of 25%. What is the brake horsepower of the engine?

  A. 12.5 hp
  B. 15.63 hp
  C. 16.76 hp
  D. 20.95 hp

- A refrigeration system produces 150 BTU/lbm of cooling. In order to have a rating of 1 ton refrigeration, what must be the mass flow rate of the vapor? (1 ton of refrigeration = 12000 BTU/hr approxiamately the rate required to freeze 1 ton of ice in a day.)

  A. 02.2 lbm/hr
  B. 15 lbm/hr
  C. 80 lbm/hr
  D. 360 lbm/hr

- The mole is the basic unit of measurement in chemistry. Which of the following is not equal to or the same one mole of the substance indicated?

  A. 6.02x10^23 of oxygen (O2) molecules
  B. 16g oxygen (O2) molecules
  C. 12g of carbon atoms
  D. 1g of hydrogen (H) atoms

- The valve between a 9 liter tank containing gas 5 atmospheres ad a 6 liter tankcontaining gas at 10 atmospheres is opened. What is the equilibrium pressure obtained in the two tanks at constant temperature? Assume ideal gas behavior.

A. 5 atm
B. 6 atm
C. 7 atm
D. 8 atm

- A bicycle tire has avolume of 600cm3. It is inflated with CO2 to a pressure of 80 psi at 20C. How many grams of CO2 are contained in the tire?

A. 3.83 g
B. 4.83 g
C. 5.98 g
D. 6.43 g

- On a hot day, the temperature rises from 50F early in the morning to 99F in the afternoon. What is the ratio of the concentration (in moles/ft3 of helium in a spherical balloon in the afternoon to the concentration of helium in the balloon in the morning?

A. 0.51
B. 0.69
C. 0.91
D. 1.10

- When 0.5 g of a liquid is completely evaporated and collected in a 1 liter manometer, the pressure is 0.25 atmosphere and the temperature is 27C. Assuming ideal gas behavior, determine the molecular weight. The gas constant is R=0.0821/atm./mole K.

A. 2 g
B. 2.2 g
C. 12.3 g
D. 49.2 g

- Two hundred milliliters of oxygen gas (o2) are collected over water at 23C and a pressure of 1 atmosphere. What volume would the oxygen occupy dry at 273 K and 1 atmosphere?

A. 179.3 ml
B. 184.4 ml
C. 190.9 ml
D. 194.5 ml

- The atomic weight of hydrogen is gram per-atom. What is the mass of a hydrogen atom?

A. 1.66x10^-24 g/atom
B. 6.02x10^-10 g/atom
C. 1.0x10^-23 g/atom
D. 1 g/atom

- Calculate the theoretical density of copper given that the unit cell is face-centered cubic and the lattice parameter is 361A. The atomic weight of copper is 63.5 g/mole.

A. 4.49 g/cm3
B. 7.86 g/cm3
C. 8.78 g/cm3
D. 8.97 g/cm3

- Determine the planar density of copper atoms in the (100) plane given that the unit cell is face-centered cubic and the lattice parameter is 3.16A.

A. 7.68x10^18 atoms/m2
B. 1.5310^19 atoms/m2
C. 2.30x10^19 atoms/m2
D. 3.84x10^19 atoms/m2

- A sample of face-centered cubic nickel (Ni) was placed in an X-ray beam of wavelength λ=0.154 nm. If the lattice parameter for Ni is ao=0.352nm, what is the first-order angle of diffraction?

A. 5.68
B. 6.97
C. 12.6
D. 19.0

- An open chamber rests on the ocean floor in 160. feet of sea water (sp.gr.=1.03). What air pressure in psig must be maintained inside to exclude water?

A. 4.52
B. 60.9
C. 71.4
D. 93.2

- Pressure in lbf/ft2 of air, t the ambient conditions of 14.7 psia and 68F, is equivalent to 2 psia?

A. 146
B. 395
C. 3840
D. 1560

- With normal barometric pressure at sea level, atmospheric pressure at an elevation of 4000 feet is nearest to:

A. 26” Hg.
B. 28” Hg.
C. 27” Hg.
D. 29” Hg.

- An open topped cylindrical water tank has a horizontal circular base 10 feet in diameter. When filled to a height of 8 feet, the force in lbs. exerted on its base is nearest to:

  A. 3,900
  B. 7,800
  C. 26,000
  D. 39,000

- Each connection between a 90 degree elbow and the 6” diameter pipeline to which it is connected must resist what net tensile force in lbs. under static, no-flow conditions if the line is pressurized to 100 psig?

  A. 710
  B. 830
  C. 2000
  D. 2800

- A circular access port 2 feet in diameter seals an environment test chamber that is pressurized to 15 psi above external pressure. What force lbs. does the port exert upon its retaining structure?

A. 1700
B. 3700
C. 2300
D. 6800

- Ice in an iceberg has a sp.gr. Of 0.922. when floating in seawater (sp.gr. 1.03), its exposed volume% is nearest to:

A. 5.6
B. 7.4
C. 8.9
D. 10.5

- A floating cylinder 8cm in diameter and weighing 950 grams is placed in a cylindrical container 20cm in diameter partially full of water. The increase in the depth water in the container due to placing the float in it is:

  A. 10cm
  B. 5cm
  C. 3cm
  D. 2cm

- The theoretical velocity generted by a 10 foot hydraulic head is:

A. 12.2 ft/sec
B. 17.9 ft/sec
C. 25.4 ft/sec
D. 29.2 ft/sec

- What is the static head corresponding to a flow velocity of 10ft/sec?

A. 1.55 ft
B. 1.75 ft
C. 2.05 ft
D. 2.25 ft

- Normal boiling point of liquid oxygen is 90K. What is this temperature in R?

A. -330R
B. -183R
C. 162R
D. 168R

- A gas bubble rising from the ocean floor is 1 inch in diameter at a depth of 50feet. Given the sp. Gr. Of seawater is 1.03, the bouyant force in lbs being exerted on the bubble at this instant is nearest to:

  A. 0.014

  B. 0.020

  C. 0.076

  D. 0.14

- Draft , in inches of water differential pressure, is generated at the base of a 100 foot stack filled with 500F gases (assume same molecular weight as air due to differential specific gravity.Under ambient conditons of 14.7 psia and 68F, air sp. Wt. is 0.075 lbf/ft3.) The drft is nearest to:

A. 0.30”water
B. 0.65”water
C. 1.00”water
D. 1.50”water

- A floating cylinder 8 cm in diameter and weighing 950grams is placed in a cylindrical container 20 cm in diameter partially full of water. The increase in the depth of water in the container due to placing th float in it is:

  A. 10cm
  B. 5cm
  C. 3cm
  D. 2cm

- Air flows in a long length of 1” diameter pipe. At one end the pressure is 30 psia, the temperature is 300F and the viscosity is 30 ft/sec. at the other end the pressure has been reduced by friction and heat loss to 20psia. The mass flow rate in lb/sec at any section along the pipe is nearest to:

  A. 0.02
  B. 0.11
  C. 0.37
  D. 1.5

- Wate rflows rate a long ½ in. i.d. hose at 3 gallons per minute. Water velocity in ft/sec Is nearest to:

A. 1
B. 5
C. 10
D. 20

- Theoretical horsepower required to pump water at 100 gallons per minute from a large reservoir to the surface of another large reservoir 400 feet higher is nearest to:

A. 6hp
B. 10hp
C. 18hp
D. 36hp

- A horizontal stream of water with a cross sectional area of 0.1ft2 and a velocity of 40 ft/sec has a kinetic energy in ft-lbf/sec nearest to:

A. 2500
B. 6200
C. 11700
D. 56000

- A water tank consist of a right circular cone that has its central axis vertical and its vertex at the bottom. The radius at the top is 10 feet, the height is 50 feet, and the water is 15 feet deep. Determine the work required to pump all the water to the level of the top of the cone.

  Answer: 342,000 ft lb

- A stream of fluid with a mass flow rate of 2 slugs/sec to the right has its direction reversed 180 in a U fitting. The net dynamic force in lbf exerted by the fluid on the fitting is nearest to:

A. 40
B. 80
C. 514
D. 1288

- The thrust in lbf generated by an aircraft jet engine on takeoff per 1 lbm/sec of exhaust products, whose veelocity has been increased from essentially 0 to 500 ft/sec, is nearest to which of the following:

A. 15
B. 130
C. 360
D. 710

- An orifice 2” in diameter discharge fluid from a tank with a head of 15 feet. Discharge rate q, measured at 0.5 cfs. Actual velocity at the vena contracta,v.c., is 29.0 ft/sec. The coefficient of discharge , Cd, is nearest to:

A. 0.62
B. 0.74
C. 0.79
D. 0.86

- At normal atmospheric pressure, the maximum height in feet that a non volatile fluid of specific gravity of 0.80 may be siphoned is nearest to:

A. 12
B. 20
C. 28
D. 42

- Water flow rate ina 6 inch diameter pipe is measured with a differential pressure gage connected between a static pressure tap in the pipe wall and a pitot tube located at the centerline. Which volume flow rate,q in cfs, results in a differential pressure of 1 psi?

  A. 0.2
  B. 2.4
  C. 15.6
  D. 28.2

- A non-flow (closed) closed system contains 1 lb of an ideal gas (Cp=0,24, Cv=0/17). The gas temperature is increased by 10F while 5 BTU of work are done by the gas. What is heat transfer in BTU?

  A. -3.3

  B. -2.6

  C. +6.7

  D. +7.4

- Shaft work of -15 BTU/lb and heat transfer of -10 BTU/lb change enthalpy of a system by

A.-25 BTU/lb
B. -15 BTU/lb
C. -10 BTU/lb
D. +5 BTU/lb

- 55,000 gallons of water passes through a heat exchanger and absorbs 28,000,000 BTU’s. The exit temperature is 110F. The entrance water temperature in F is nearest to:

A.49
B. 56
C. 68
D. 112

- The mass flow rate of Freon 12 through a heat exchanger is 10 pounds/minute. Enthalpy pf Freon entry is 102 BTU/lb and of Freon exit is 26 BTU/lb. Water coolant is allowed to rise 10F. The water flow rate in pounds/minute is:

A.24
B. 76
C. 83
D. 112

- The maximum thermal efficiency that can be obtained in an ideal reversible heat engine operating between 1540F and 340F is closest to

A.100%
B. 60%
C. 78%
D. 40%

- A 3 HP refrigerator or heat pump operates between 0F and 1000 F. The maximum theoretical heat that can be transferred from the cold reservoir is nearest to:

A.7,600 BTU/hr
B. 13,000 BTU/hr
C. 23,000 BTU/hr
D. 35,000 BTU/hr

- A Carnot cycle heat engine operating between 1540F and 440F has an efficiency of approximately

A.55%
B. 45%
C. 35%
D. 29%

- Second law limitation on the maximum horsepower output from any power unit burning 1,000,000 BTU/hr of fuel with high and low temperature extremes of 1540F and 40F is:

A.98
B. 295
C. 1140
D. 3830

- A Carnot cycle heat engine operates between 1540F and 40F and rejects 250. BTU/lb to the low temperature reservoir or heat sink. Maximum entropy change in BTU/lb R of the working fluid for any process in the cycle is:

A.0
B. 0.25
C. 0.50
D. 1.0

- A high velocity flow of gas at 800 ft/sec possesses kinetic energy nearest to which of the following?

A.1.03 BTU/lb
B.4.10 BTU/lb
C.9.95 BTU/lb
D. 12.8 BTU/lb

- A mixture at 14.7 psia and 68F that is 30% weight CO_2 (m wt=44) and 7& weight N_2 (m wt=28) has apartial pressure of CO_2 in psia that is nearest to:

A.2.14
B.3.15
C.6.83
D. 7.86

- Given that molar Cp of CO_2 is 8.92 BTU/(lb mole R), and molar Cp of N_2 is 6.95 BTU/(lb mole R), the calculated Cp per pound of mixture containing 25% vol. CO_2 and 75% vol N_2 is:

A.0.23 BTU/(lb R)
B. 2.23 BTU/(lb R)
C. 5.21 BTU/(lb R)
D. 7.44 BTU/(lb R)

- Dry air has an average molecular weight of 28.9, consisting of 21 mole-% O2, 78 mole-% N2 and 1 mole-%(argon,traces of CO2). Its calculated wt% O2 is nearest to:

A.21.0
B.22.4
C.23.2
D. 24.6

- Sonic velocity (Mach 1) at 50,000 feet altitude in the standard upper atmosphere (-67.6F and 1.68 psia) is nearest to:

A. 880 ft/sec
B.971 ft/sec
C.995 ft/sec
D. 1064 ft/sec

- Durind complete stoichiometric combustion of 1lb mole of methane (CH_4) with air, the number of lb. moles nitrogen and other inert thath pass through the combustion zone is nearest to:

A.0.79
B.3.9
C.5.6
D.7.5

- The heat loss per hour through 1 sq ft of furnace wall 18” thick is 520 Btu. The inside wall temperature is 1900F, and its average thermal conductivity is 0.61 BTU/hr ft F. The outside surface temperature of the wall is nearest to:

A.100F
B.300F
C.600F
D.1000F

- Which of the following is NOT a usual operation of the power/unit area Stefan-Boltzmann constant for black body radiation?

A.1.36x10^-12 cal/(sec cm^2 K^4)
B.5.68x10^-8 watts/(m^2 K^4)
C.5.68x10^-5 ergs/(sec cm^2 K^4)
D.5.68x1010^-8 coulombs/(sec m^2K^4)

- A rectangular duct section 35cm x 50cm sizes carries 75m^3/min of air having density of .15kg/m3. If the friction factor of sheet metal is 0.01, find the pressure loss per 100 m length of duct.

A.29 mm of H2O
B.36 mm of H2O
C.25 mm of H2O
D.35 mm of H2O

- The suction pressure of a 4-stage compressor is 140 kPa. It compresses air at the rate of 15m^3/min, clearance is about 8% and 200 rpm. The compressor discharges compressed air at a pressure of 1000 kPa. If the compressor uses inter cooling determine the ideal pressure at the first stage intercooler.

A.228.87 kPa
B.345.67 kPa
C.453.45 kPa
D.345.45 kPa

- A commercial air-conditioner is rated by means of its EER or energy efficiency ratio. For a certain air-conditioner with a cooling capacity of 4kW and requires 1000W, approximate the EER if this unit.

A.13.65
B.12.80
C.10.10
D.11.11

- S

A.
B.
C.
D.