Rate of work done on the piston by burning of the fuel inside the cylinder of I C engine is called

Options:
Friction Power
Indicated power
Brake power
Mechanical power

The exhaust pressure in the cylinder of an IC engine is
Options:
More than atmospheric pressure
less than atmospheric pressure
equal to atmospheric pressure
zero (absolute)

Question Number : 3  Question Id : 827347403  Question Type : MCQ

Condenser is not used in
Options:
Steam power plant
Vapor compression refrigeration system
Gas turbine power plant
Vapor absorption refrigeration system

Question Number : 4  Question Id : 827347404  Question Type : MCQ

Brayton cycle consists of
Options:
Two reversible isobars and two reversible adiabatic process
Two reversible isotherm and two reversible adiabatic process
Two reversible isotherm and two reversible isobars process
Two reversible adiabatics and one reversible isotherm, one reversible isobaric process

Question Number : 5  Question Id : 827347405  Question Type : MCQ

Efficiency of Brayton cycle is given by [where ‘r’ is the pressure ratio, \( \gamma = \text{specific heat ratio} \)]
Options:
\[
\eta = 1 - \frac{1}{r^{\gamma - 1}}
\]
\[
\eta = 1 - \frac{1}{r^\gamma}
\]
\[
\eta = 1 - \frac{1}{r^{(\gamma - 1)/\gamma}}
\]

Question Number : 6  Question Id : 827347406  Question Type : MCQ

Mass flow rate through steam nozzle is maximum when pressure ratio is
Options:
\[
\frac{p_2}{p_1} = \left( \frac{1}{n+1} \right)^{\gamma n-1}
\]
\[
\frac{p_2}{p_1} = \left(\frac{2}{n+1}\right)^{(n-1)/n}
\]

\[
\frac{p_2}{p_1} = \left(\frac{2}{n+1}\right)^{(n-1)/n}
\]

\[
\frac{p_2}{p_1} = \left(\frac{2}{n+1}\right)^{(n-1)/n}
\]

Question Number : 7  Question Id : 827347407  Question Type : MCQ

The component of velocity which is responsible for producing the work in steam turbine is called

Options :
Axial velocity
Whirl velocity
Relative velocity
Absolute velocity

Question Number : 8  Question Id : 827347408  Question Type : MCQ

Impulse turbines work on the principle of

Options :
Newton’s first law
Newton’s second law
Newton’s third law
Conservation of mass

Question Number : 9  Question Id : 827347409  Question Type : MCQ

In Curtis turbines

Options :
The velocity of steam drops gradually after passing over the rows of moving blades
The pressure of steam drops gradually after passing over the rows of moving blades
The mass of steam drops gradually after passing over the rows of moving blades
Both pressure and velocity of steam drops gradually after passing over the rows of moving blades

Question Number : 10  Question Id : 827347410  Question Type : MCQ

Degree of reaction is defined as

Options :
(enthalpy drop in the moving blades) / (total enthalpy drop in the stage)
(Total enthalpy drop in the stage) / (enthalpy drop in the moving blades)
(work done on the blade) / (energy supplied to the blades)
(work done on the blade) / (energy supplied per stage)

Question Number : 11  Question Id : 827347411  Question Type : MCQ

Which of the followings is not the element of hydroelectric power plant?
Options:
- Catchment area
- Dam
- Draft tube
- Condenser

Question Number : 12  Question Id : 827347412  Question Type : MCQ

High head hydo-power plant uses
Options:
- Kaplan turbine
- Francis turbine
- Pelton turbine

The type of turbine used does not depend on head of hydro-power plant

Question Number : 13  Question Id : 827347413  Question Type : MCQ

Thermal efficiency of Rankin cycle can be enhanced by
Options:
- Decreasing the average temperature of heat addition
- Increasing the superheat at constant pressure
- Increasing the average temperature of heat rejection

The efficiency of Rankine cycle does not depend on average temperature of heat addition

Question Number : 14  Question Id : 827347414  Question Type : MCQ

Which of the followings is not the desirable feature of moderator in nuclear reactor?
Options:
- It has low thermal conductivity
- It slows down the neutron
- It is non corrosive
- It has good chemical stability

Question Number : 15  Question Id : 827347415  Question Type : MCQ

Which of the following is not the component of nuclear power plant
Options:
- Steam generator
- Steam turbine
- Nuclear reactor
Penstock

**Question Number : 16  Question Id : 827347416  Question Type : MCQ**

The available wind power in wind turbines increases with

Options :
- Decrease in rotor diameter
- Increase in rotor diameter
- Decrease in wind velocity
- Decrease in air velocity

**Question Number : 17  Question Id : 827347417  Question Type : MCQ**

Flat plate collectors are used to heat the water up to the temperature of

Options :
- 70-90°C
- 100-200°C
- 200-300°C
- 300-400°C

**Question Number : 18  Question Id : 827347418  Question Type : MCQ**

The ratio of average load to the maximum load is known as

Options :
- Utilization factor
- Diversity factor
- Plant capacity factor
- Load factor

**Question Number : 19  Question Id : 827347419  Question Type : MCQ**

“Sinking fund method” is used to calculate the

Options :
- Initial cost of the power plant
- Installation cost of the power plant
- Depreciation cost of power plant
- Interest on the loan borrowed to install the power plant

**Question Number : 20  Question Id : 827347420  Question Type : MCQ**

The ratio of “additional input required” to “increase an additional output” in power plant is known as

Options :
- Heat rate
- Incremental heat rate
- Steam rate
Efficiency

Question Number : 21  Question Id : 827347421  Question Type : MCQ

For liquids, the values of dynamic viscosity(\(\mu\)) and kinematic viscosity(\(v\)) are
Options :
Highly dependent of variation of pressure
Practically independent of variation of pressure
Practically independent of variation of temperature
Increases with increase in temperature

Question Number : 22  Question Id : 827347422  Question Type : MCQ

Rate of deformation of fluid element is equal to
Options :
Shear stress
Coefficient of dynamic viscosity
Coefficient of kinematic viscosity
Velocity gradient

Question Number : 23  Question Id : 827347423  Question Type : MCQ

Bernoulli’s equation is not applicable for
Options :
Steady flow
Incompressible flow
Flow with work transfer
Frictionless flow

Question Number : 24  Question Id : 827347424  Question Type : MCQ

Energy grade line(EGL) represents the
Options :
Elevation head
Pressure head +elevation head
Pressure head + velocity head + elevation head
Pressure head +velocity head

Question Number : 25  Question Id : 827347425  Question Type : MCQ

Hydraulic diameter of square duct is given by
Options :
Side of the square
2xSide of the square
1.5xSide of the square
0.5 x Side of the square

Question Number : 26  Question Id : 827347426  Question Type : MCQ

Maximum velocity in fully developed laminar pipe flow is

Options :
Half of average velocity
Two-third of average velocity
Twice of average velocity
Equal to average velocity

Question Number : 27  Question Id : 827347427  Question Type : MCQ

Momentum thickness is given by

Options :

\[ \int_0^1 \left(1 - \frac{u}{U} \right) dy \]
\[ \int_0^1 \frac{u}{U} \left(1 - \frac{u}{U} \right) dy \]
\[ \int_0^1 \frac{u}{U} \left(1 - \frac{u^2}{U^2} \right) dy \]
\[ \int_0^1 \frac{u^2}{U^2} \left(1 - \frac{u^2}{U^2} \right) dy \]
\[ \int_0^1 \frac{u^2}{U^2} \left(1 - \frac{u^3}{U^3} \right) dy \]

Question Number : 28  Question Id : 827347428  Question Type : MCQ

Pitot tube is used to measure the

Options :
Flow rate of fluid
Velocity of the fluid
Density of fluid
Pressure inside the pipe

Question Number : 29  Question Id : 827347429  Question Type : MCQ

If head over the rectangular notch is \( H \), volume flow rate is \( Q \), coefficient of discharge is \( C_d \), then length of the notch is given by

Options :

\[ \frac{Q}{C_d \sqrt{2gH^{3/2}}} \]
\[ \frac{3Q}{2C_d \sqrt{2gH^{3/2}}} \]
\[
\frac{Q}{C_d \sqrt{2gH^{\frac{3}{2}}}} \quad \frac{3Q}{2C_d \sqrt{2gH^{\frac{3}{2}}}}
\]

Question Number : 30  Question Id : 827347430  Question Type : MCQ

Square root of ratio of inertia force of a flowing fluid to the pressure force is known as
Options :
Weber number
Mach number
Euler number
Froude number

Question Number : 31  Question Id : 827347431  Question Type : MCQ

The ratio of power available at the shaft of the turbine to power delivered by water to the runner is known as
Options :
Hydraulic efficiency
Mechanical efficiency
Volumetric efficiency
Overall efficiency

Question Number : 32  Question Id : 827347432  Question Type : MCQ

Which of the following statements is not correct for draft tube
Options :
It allows the negative head at the outlet of runner
It is of gradually increasing area of cross section
It increases the efficiency of turbine
It converts the pressure energy at the outlet of turbine into useful kinetic energy

Question Number : 33  Question Id : 827347433  Question Type : MCQ

Net head provided by the liquid pump is given by \[ \text{where, } \text{EGL=} \text{ Energy grade line, } \text{HGL=} \text{ hydraulic grade line, } \text{out=} \text{ outlet of pump, } \text{in=} \text{ Inlet of pump} \]
Options :
\((\text{EGL})_{\text{out}} + (\text{EGL})_{\text{in}}\)
\((\text{HGL})_{\text{out}} + (\text{HGL})_{\text{in}}\)
\((\text{EGL})_{\text{out}} - (\text{EGL})_{\text{in}}\)
\((\text{HGL})_{\text{out}} - (\text{HGL})_{\text{in}}\)

Question Number : 34  Question Id : 827347434  Question Type : MCQ
Maximum volume flow rate through pump occurs when
Options:
Net head is maximum
Net head is zero
Pump operates at best efficiency point
Net head is greater than zero but less than maximum

Question Number : 35  Question Id : 827347435  Question Type : MCQ

Cavitation in the pump occurs when
Options:
Vapor pressure of liquid is greater than local pressure of liquid inside the pump
Vapor pressure of liquid is lower than local pressure of liquid inside the pump
Vapor pressure of liquid is lower than that of atmospheric pressure
Local pressure of liquid inside the pump is greater than atmospheric pressure

Question Number : 36  Question Id : 827347436  Question Type : MCQ

Which of the following hydraulic turbine has lowest specific speed
Options:
Kaplan turbine
Propeller turbine
Impulse turbine
Francis turbine

Question Number : 37  Question Id : 827347437  Question Type : MCQ

Slip of reciprocating pump becomes negative when
Options:
Theoretical discharge is more than actual discharge
Actual discharge is more than theoretical discharge
Theoretical discharge is equal to actual discharge
Pump is running at low speed

Question Number : 38  Question Id : 827347438  Question Type : MCQ

Refrigerating effect in vapor compression refrigeration system increases with
Options:
Increase in evaporator temperature at constant condenser pressure
Decrease in evaporator pressure at constant condenser pressure
Increase in condenser temperature at constant evaporator temperature
Increase in mass flow rate of refrigerant in the system

Question Number : 39  Question Id : 827347439  Question Type : MCQ
Specific isentropic work of compression in vapor compression refrigeration system decreases with
Options:
Decrease in evaporator temperature at constant condenser temperature
Increase in evaporator temperature at constant condenser temperature
Increase in condenser temperature at constant evaporator temperature
Decrease in evaporator temperature and increase in condenser temperature

Question Number: 40  Question Id: 827347440  Question Type: MCQ

COP of vapor compression refrigeration system increases with
Options:
Increase in evaporator temperature at constant condenser temperature
Decrease in evaporator temperature at constant condenser temperature
Increase in condenser temperature at constant evaporator temperature
Increase in mass flow of refrigerant

Question Number: 41  Question Id: 827347441  Question Type: MCQ

Which of the following components of vapor absorption refrigeration system has same pressure level [neglecting the pipe loss]
Options:
Generator and absorber
Evaporator and absorber
Generator and evaporator
Condenser and evaporator

Question Number: 42  Question Id: 827347442  Question Type: MCQ

Neglecting the pump work, Energy equation for vapor absorption refrigeration system may be written as [where, \( Q \) = heat transfer rate into the system]
Options:
\[ Q_{\text{generator}} + Q_{\text{evaporator}} - Q_{\text{condenser}} + Q_{\text{absorber}} = 0 \]
\[ Q_{\text{generator}} + Q_{\text{evaporator}} + Q_{\text{condenser}} - Q_{\text{absorber}} = 0 \]
\[ Q_{\text{generator}} + Q_{\text{evaporator}} + Q_{\text{condenser}} + Q_{\text{absorber}} = 0 \]
\[ Q_{\text{generator}} + Q_{\text{evaporator}} - Q_{\text{condenser}} - Q_{\text{absorber}} = 0 \]

Question Number: 43  Question Id: 827347443  Question Type: MCQ

Which of the following is not the desirable property of refrigerant
Options:
Low latent heat
High vapor density
Low freezing temperature
Low condenser pressure

Question Number : 44  Question Id : 827347444  Question Type : MCQ

Ozone depletion potential (ODP) is the measure of ozone depletion capability of a refrigerant compared to that of

Options :
R11  
R718  
R717  
R22

Question Number : 45  Question Id : 827347445  Question Type : MCQ

Specific enthalpy of moist air is given by \[\text{where } t = \text{temperature of moist air in } ^\circ\text{C, } w = \text{specific humidity in kg per kg of dry air}\]

Options :
1.005t + (2500+1.88w)t  
1.005t + (2500w +1.88)t  
1.005t + (2500w +1.88t)  
1.005t + w(2500 +1.88t)

Question Number : 46  Question Id : 827347446  Question Type : MCQ

Ratio of latent heat transfer to total heat transfer is given by

Options :
Sensible heat factor (SHF)  
1 - SHF  
(SHF)^2  
1 - (SHF)^2

Question Number : 47  Question Id : 827347447  Question Type : MCQ

On psychrometric chart, when condition line is extended to meet the saturation curve at a point, the temperature of this point is known as

Options :
Dry bulb temperature  
Wet bulb temperature  
Apparatus dew point  
Atmospheric temperature

Question Number : 48  Question Id : 827347448  Question Type : MCQ

A circular shaft is revolving inside the bearing is an example of

Options :
Sliding pair
Turning pair
Rolling pair
Spherical pair

Velocity ratio for pulley drive is given by \[ \text{where } D_1=\text{diameter of driving pulley, } D_2=\text{diameter of driven pulley, } t=\text{thickness of belt, } S=\text{total percentage slip} \]

\[ \left( \frac{D_1 + t}{D_2 + t} \right) \left( \frac{100 + S}{100 - S} \right) \]

\[ \left( \frac{D_1 + t}{D_2 + t} \right) \left( \frac{100 - S}{100} \right) \]

\[ \left( \frac{D_1 + t}{D_2 + t} \right) \left( \frac{100 + S}{100} \right) \]

Question Number : 50  Question Id : 827347450  Question Type : MCQ

Which of the following statements is not correct for the ratio of friction tension in flat-belt \( \left( \frac{T_1}{T_2} = e^{\mu \theta} \right) \)

Options :

\( T_1 = \text{tension on tight side} \)
\( T_2 = \text{tension on tight side} \)
\( \theta = \text{angle of lap over the pulley} \)
\( \mu = \text{coefficient of friction between belt and pulley} \)

Question Number : 51  Question Id : 827347451  Question Type : MCQ

“Addendum” is defined as

Options :

The radius of addendum circle
The radial height of the tooth below the pitch circle
The radial height of the tooth above the pitch circle
It is the full depth of the tooth

Question Number : 52  Question Id : 827347452  Question Type : MCQ

If a spur gear has module of 4mm, its circular pitch will be given by

Options :

2mm
3mm
6.28mm
12.56mm

Question Number : 53  Question Id : 827347453  Question Type : MCQ

Damping force per unit velocity is known as
Options :
Damping factor
Damping coefficient
Logarithmic decrement
Stiffness of the spring

Question Number : 54  Question Id : 827347454  Question Type : MCQ

Which of the following governors is not spring controlled?
Options :
Hartnell governor
Hartung governor
Wilson- hartnell governor
Porter governor

Question Number : 55  Question Id : 827347455  Question Type : MCQ

Braking torque on the drum of shoe brake is given by
Options :
(Normal reaction on the block)x(radius of drum)
(Frictional force on the block)x(radius of drum)
(Force applied at the lever end)x(radius of drum)
2x(Force applied at the lever end)x(radius of drum)

Question Number : 56  Question Id : 827347456  Question Type : MCQ

For thin cylinders
Options :
Longitudinal stress is double of the circumferential stress
Longitudinal stress is half of the circumferential stress
Longitudinal stress is equal to the circumferential stress
Longitudinal stress is four times of the circumferential stress

Question Number : 57  Question Id : 827347457  Question Type : MCQ

Which of the relationship between bulk modulus (K), Modulus of elasticity(E) and modulus of rigidity(G) is correct
Options :
The capacity of material to absorb and release strain energy within elastic limit is known as

Options:
- Resilience
- Toughness
- Modulus of toughness
- Hardness

Area under the stress-strain curve when load is gradually applied in tension represents the

Options:
- Strain energy
- Strain energy density
- Strain energy per unit weight
- Strain energy per unit area

Volumetric strain of fluid filled inside the thin cylinder (diameter = D) under the pressure(P) is given by[ where ν, t, E are Poisson ratio, thickness and modulus of elasticity respectively]

Options:
\[
\frac{PD(1-4v)}{4tE} \\
\frac{PD(5-v)}{4tE} \\
\frac{PD(5-4v)}{4tE} \\
\frac{PD(1-v)}{4tE}
\]

Question Number : 62  Question Id : 827347462  Question Type : MCQ

Three shafts (spring constant \(k_1, k_2, k_3\)) are connected in series such that they carry the same torque \(T\), then spring constant \((k)\) for composite shaft will be

Options :
\[k = k_1 + k_2 + k_3\]
\[k = \left(\frac{k_1 k_2 + k_2 k_3 + k_3 k_1}{k_1 + k_2 + k_3}\right)^\frac{1}{2}\]

Question Number : 63  Question Id : 827347463  Question Type : MCQ

Which of the following statements is true for shear force \((SF)\) and bending moment \((BM)\) diagram [where, \(w = \text{weight per unit length}\)]

Options :
Change in BM over a small length \([dM]\) = Area of SF diagram under that length \([Vdx]\)
Change in BM over a small length \([dM]\) = Rate of change of SF under that length \([dV/dx]\)
Rate of change of Change in BM over a small length \([dM/dx]\) = Rate of change of SF under that length \([dV/dx]\)
Change in SF over a small length \([dV]\) is greater than area of loading diagram over that length \([wdx]\)

Question Number : 64  Question Id : 827347464  Question Type : MCQ

In thick cylinder, if hoop tress \(t\) is plotted w.r.t. \(\frac{1}{r^2}\), then the curve will be

Options :
Parabolic
Hyperbolic
Linear
Elliptical
Question Number : 65  Question Id : 827347465  Question Type : MCQ

Which of the following theories of failure is not suitable for ductile material
Options :
Maximum shear stress theory
Maximum principal strain theory
Maximum total strain energy theory
Maximum principal stress theory

Question Number : 66  Question Id : 827347466  Question Type : MCQ

Combined thrust and radial load is taken by
Options :
Spherical ball bearing
Needle bearing
Cylindrical roller bearing
Deep groove type ball bearing

Question Number : 67  Question Id : 827347467  Question Type : MCQ

Radiation thermal resistance may be written as[where F, A, σ are
shape factor, Area and stefan-Boltzmann constant respectively]
Options :
\[
\frac{1}{FAσ(T_1 + T_2)(T_1^2 + T_2^2)}
\]
\[
\frac{1}{FAσ(T_1 + T_2)(T_1^2 - T_2^2)}
\]
\[
\frac{1}{FAσ(T_1^4 + T_2^4)}
\]
\[
\frac{1}{FAσ(T_1^4 - T_2^4)}
\]

Question Number : 68  Question Id : 827347468  Question Type : MCQ

Three dimensional steady state heat conduction equation with internal heat generation
and constant thermal conductivity is known as
Options :
Laplace equation
Poisson equation
Fourier equation
Diffusion equation

Question Number : 69  Question Id : 827347469  Question Type : MCQ


Which of the following material has highest thermal conductivity at room temperature
Options:
Gold
Diamond
Iron
Aluminum

Question Number: 70  Question Id: 827347470  Question Type: MCQ

Nusselt number is defined as
Options:
Heat transfer by conduction / heat transfer by convection
(Heat transfer by conduction / heat transfer by convection)^2
(Heat transfer by convection / heat transfer by conduction)^2
Heat transfer by convection / heat transfer by conduction

Question Number: 71  Question Id: 827347471  Question Type: MCQ

For materials, where Prandtl number (Pr)>>1
Options:
Heat diffuses at faster rate than momentum diffusion through the medium
Heat and momentum diffuses at almost same rate through the medium
Thermal boundary layer is much thicker than hydrodynamic boundary layer
Thermal boundary layer is much thinner than hydrodynamic boundary layer

Question Number: 72  Question Id: 827347472  Question Type: MCQ

Grashoff number may be defined as
Options:
Viscous force / buoyancy force
Inertia force / pressure force
Buoyancy force / viscous force
Inertia force / gravity force

Question Number: 73  Question Id: 827347473  Question Type: MCQ

Nukiyama’s Boiling curve is plotted between
Options:
Boiling temperature vs excess temperature
Boiling heat flux vs boiling temperature
Boiling temperature vs boiling pressure
Boiling heat flux vs excess temperature

Question Number: 74  Question Id: 827347474  Question Type: MCQ
Effectiveness ($\varepsilon$) and NTU relation for condenser may be written as

Options:

\[ NTU = \ln(1 + \varepsilon) \]
\[ NTU = \ln(1 - \varepsilon) \]
\[ NTU = -\ln(1 - \varepsilon) \]
\[ \varepsilon = \frac{NTU}{1+NTU} \]

Question Number : 75  Question Id : 827347475  Question Type : MCQ

Which of the following is not the characteristics of Planck’s black body radiation distribution

Options:
As temperature increases, the peak of the curve shift towards higher wavelength
Spectral emissive power varies continuously with the change in wavelength
At a given wavelength, as temperature increases, emissive power also increases
Total emissive power is proportional to $T^4$

Question Number : 76  Question Id : 827347476  Question Type : MCQ

Incident radiation of 1000 W/m² falls on the object. The energy absorbed by the object is 400 W/m² and energy transmitted is 350 W/m². What will be the value of reflectivity?

Options:
0.40
0.35
0.75
0.25

Question Number : 77  Question Id : 827347477  Question Type : MCQ

Use of Modified Rankine cycle causes the

Options:
Reduction of the bore of cylinder
Reduction of the stroke of cylinder
Increase the work output of an engine
Increase the efficiency of an engine

Question Number : 78  Question Id : 827347478  Question Type : MCQ

Regeneration of simple Rankine cycle leads to

Options:
The heating process in the boiler be less irreversible
The heating process in the boiler be more irreversible
The reduction in average temperature of heat addition
The reduction in efficiency of cycle

Question Number : 79  Question Id : 827347479  Question Type : MCQ

Thermal efficiency of diesel cycle is

Options :
Reduced at high compression ratio for same cut off ratio and heat capacity ratio
Independent of variation of cut off ratio and heat capacity ratio
Reduced at higher cut off ratio for same compression ratio and heat capacity ratio
Reduced at high heat capacity ratio for same compression ratio and cut off ratio

Question Number : 80  Question Id : 827347480  Question Type : MCQ

For same compression ratio and heat addition, the efficiency of otto, diesel and dual cycle may compared as

Options :
\[ \eta_{\text{diesel cycle}} > \eta_{\text{dual cycle}} > \eta_{\text{otto cycle}} \]
\[ \eta_{\text{diesel cycle}} > \eta_{\text{otto cycle}} > \eta_{\text{dual cycle}} \]
\[ \eta_{\text{otto cycle}} > \eta_{\text{diesel cycle}} > \eta_{\text{dual cycle}} \]
\[ \eta_{\text{otto cycle}} > \eta_{\text{dual cycle}} > \eta_{\text{diesel cycle}} \]

Question Number : 81  Question Id : 827347481  Question Type : MCQ

The entropy increase of the solid substance as it melts into liquid at 27°C (latent heat of fusion of substance = 400 kJ/kg)

Options :
14.8 kJ/kg-K
120MJ/kg-K
10.8MJ/kg-K
1.33 kJ/kg-K

Question Number : 82  Question Id : 827347482  Question Type : MCQ

For dry saturated vapor, the value of dryness fraction will be

Options :
0.0
0.75
0.0

Question Number : 83  Question Id : 827347483  Question Type : MCQ

Which of the following equations is incorrect? [where V, P, T and Q are volume, pressure, temperature and heat transfer respectively]

Options :
\[ \begin{align*}
\int dV &= 0 \\
\int dP &= 0 \\
\int dT &= 0 \\
\int dQ &= 0
\end{align*} \]

Question Number: 84 Question Id: 827347484 Question Type: MCQ

Which of the following statements is correct for “Energy”

Options:
- It is a point function
- It is a path function
- It is not a conserved quantity
- It can be measured by thermometer

Question Number: 85 Question Id: 827347485 Question Type: MCQ

Perpetual motion machine of second kind (PMM-II) violates the

Options:
- Zeroth law of thermodynamics
- First law of thermodynamics
- Second law of thermodynamics
- Third law of thermodynamics

Question Number: 86 Question Id: 827347486 Question Type: MCQ

The object which are used to support the core is known as

Options:
- Chill
- Chaplets
- Riser
- Sprue

Question Number: 87 Question Id: 827347487 Question Type: MCQ

“Bell” shapes are generally made by

Options:
- Single piece pattern
- Gated pattern
- Cope and drag pattern
- Sweep pattern

Question Number: 88 Question Id: 827347488 Question Type: MCQ
The properties of moulding sand that allows the gases to be escaped from the mould is called
Options:
- Hot strength
- Permeability
- Refractoriness
- Plasticity

Question Number : 89  Question Id : 827347489  Question Type : MCQ

In gas welding, which of the following flames is produced when the supply of oxygen is less than that theoretically required for complete combustion is called
Options:
- Carburizing flame
- Neutral flame
- Oxidizing flame
- Transparent flame

Question Number : 90  Question Id : 827347490  Question Type : MCQ

MIG Welding uses
Options:
- Oxidizing flame
- Neutral flame
- Carburizing flame
- Consumable electrode

Question Number : 91  Question Id : 827347491  Question Type : MCQ

In rolling arrangement, the velocity of metal and velocity of rolls are same
Options:
- At neutral plane
- At exit plane
- At entry plane
- From entry plane to exit plane

Question Number : 92  Question Id : 827347492  Question Type : MCQ

Excessive heat generated during metal cutting is due to
Options:
- Built up edge formed on the cutting tool
- Correctly grounded tool
- Low friction between tool and workpiece
- Cutting tool of good surface finish
Question Number : 93  Question Id : 827347493  Question Type : MCQ

A casting of size 100x100x100mm$^3$ solidifies in 20 minutes. Find out the solidification time for casting of size 100x100x50mm$^3$ under same condition.

Options :
16.3 minutes
14.3 minutes
12.3 minutes
11.3 minutes

Question Number : 94  Question Id : 827347494  Question Type : MCQ

A time study of a machine operation recorded a cycle time of 7.6,7.8 minute. The analyst rated the observed worker 80%. The allowance fraction is 0.1. The standard time is

Options :
5.22 minutes
6.22 minutes
7.22 minutes
7.0 minutes

Question Number : 95  Question Id : 827347495  Question Type : MCQ

The fixed cost of the firm is Rs.60,000/- per month. The variable cost is Rs.10/- per unit and selling price is Rs. 50 per unit. The break even quantity will be

Options :
1300
1400
1500
1600

Question Number : 96  Question Id : 827347496  Question Type : MCQ

Modified distribution method is used for

Options :
Queueing problem
Assignment problem
Both Queuing problem and Assignment problem
Transportation problem

Question Number : 97  Question Id : 827347497  Question Type : MCQ

The maximum value of $Z = 3x+4y$ subjected to the constraints $2x+y \leq 4 \quad x+2y \geq 12 \quad x \geq 0 \quad y \geq 0$

Options :
10
20
30
No feasible solution

Question Number : 98  Question Id : 827347498  Question Type : MCQ

Shopkeeper handles only 1 person in 6 minute while customer is arriving in every 8 minutes. Average queue length will be
Options :
3 Customer
4 Customer
5 Customer
6 Customer

Question Number : 99  Question Id : 827347499  Question Type : MCQ

The flatness of a machine bed is measured by using
Options :
Slip gage
Micrometer
Auto collimator
Vernier calliper

Question Number : 100  Question Id : 827347500  Question Type : MCQ

In work study, ‘operation’ is represented by
Options :
\( \nabla \)
\( \circ \)
\( \Rightarrow \)