RPSC

Previous Year Paper

ME Lecturer 2014

Question Paper Name:	Mechanical Engineering 16 Jan
Subject Name:	mechanical engineering
Creation Date:	2016-01-15 20:48:10
Duration:	120
Total Marks:	100

Group 1

Group Number :	1
Group Id :	8273475
Group Maximum Duration :	0
Group Minimum Duration :	120
Revisit allowed for view? :	No
Revisit allowed for edit? :	No
Break time:	0
Mandatory Break time:	No
Group Marks:	100

Mechanical Engineering

Section Id :	8273475
Section Number :	1
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	100
Number of Questions to be attempted:	100
Section Marks:	100

Sub-Section Number:	1
Sub-Section Id:	8273475
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 827347401 Question Type : MCQ

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

Question Number : 2 Question Id : 827347402 Question Type : MCQ

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, γ = specific heat ratio]

Options :

$\eta = 1 - \frac{1}{r^{\gamma - 1}}$

$\eta = 1 - \frac{1}{r}$

$\eta = 1 - \frac{1}{r^{\gamma}}$

$\eta = 1 - \frac{1}{r^{(\gamma - 1)/\gamma}}$

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

Mass flow rate through steam nozzle is maximum when pressure ratio is

Options :

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

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

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

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

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 upto the temperature of

Options :

70-90^{O}C

100-200^{O}C

200-300^{O}C

300-400^{O}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(μ) and kinematic viscosity(υ) 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

0.5xSide 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 :

$\int_0^\delta \left(1-\frac{u}{U}\right)dy$

$\int_0^\delta \frac{u}{U}\left(1-\frac{u}{U}\right)dy$

$\int_0^\delta \frac{u}{U}\left(1-\frac{u^2}{U^2}\right)dy$

$\int_0^\delta \frac{u^2}{U^2}\left(1-\frac{u^2}{U^2}\right)dy$

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 :

$\frac{Q}{C_d\sqrt{2g}H^{3/2}}$

$\frac{3Q}{2C_d\sqrt{2g}H^{3/2}}$

$$\frac{Q}{C_d\sqrt{2g}H^{5/2}}$$

$$\frac{3Q}{2C_d\sqrt{2g}H^{5/2}}$$

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 [where, EGL= Energy grade line, HGL= hydraulic grade line, out = outlet of pump, in = Inlet of pump]

Options :

$(EGL)_{out} + (EGL)_{in}$

$(HGL)_{out} + (HGL)_{in}$

$(EGL)_{out} - (EGL)_{in}$

$(HGL)_{out} - (HGL)_{in}$

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 :

$Q_{generator}+Q_{evaporator}+Q_{condenser}+Q_{absorber}=0$

$Q_{generator}+Q_{evaporator}+Q_{condenser}-Q_{absorber}=0$

$Q_{generator}+Q_{evaporator}-Q_{condenser}+Q_{absorber}=0$

$Q_{generator}+Q_{evaporator}-Q_{condenser}-Q_{absorber}=0$

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 [where , t = temperature of moist air in ^{o}C, w = specific humidity in kg per kg of dry air]

Options :

1.005t + (2500+1.88w)t

1.005t + (2500 w +1.88)t

1.005t + (2500 w +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

Question Number : 49 Question Id : 827347449 Question Type : MCQ

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

Options :

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

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

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

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

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 = tension on tight side

T_2 = tension on tight side

θ= angle of lap over the pulley

μ= 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 :

$$G=\frac{9KE}{K+3E}$$

$$G=\frac{9KE}{E+3K}$$

$$G=\frac{3KE}{E+9K}$$

$$\frac{9}{E}=\frac{3}{G}+\frac{1}{K}$$

Question Number : 58 Question Id : 827347458 Question Type : MCQ

What will be the strain energy stored in the metallic bar of cross sectional area of 2 cm^2 and gauge length of 10 cm if it stretches 0.002cm under the load of 12kN ?

Options :

10 N-cm

12N-cm

14N-cm

16N -cm

Question Number : 59 Question Id : 827347459 Question Type : MCQ

The capacity of material to absorb and release strain energy within elastic limit is known as

Options :

Resilience

Toughness

Modulus of toughness

Hardness

Question Number : 60 Question Id : 827347460 Question Type : MCQ

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

Question Number : 61 Question Id : 827347461 Question Type : MCQ

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 :

$\frac{PD(1-4\nu)}{4tE}$

$\frac{PD(5-\nu)}{4tE}$

$\frac{PD(5-4\nu)}{4tE}$

$\frac{PD(1-\nu)}{4tE}$

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 carries the same torque(T), then spring constant (k) for composite shaft will be

Options :

$k = k_1 + k_2 + k_3$

$k = (k_1k_2 + k_2k_3 + k_3k_1)^{1/2}$

$\frac{1}{k} = \frac{1}{k_1} + \frac{1}{k_2} + \frac{1}{k_3}$

$k = \left(\frac{k_1k_2k_3}{k_1 + k_2 + k_3}\right)^{1/2}$

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 = 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 is plotted w.r.t. $\left(1/r^2\right)$, 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 :

$\frac{1}{FA\sigma\left(T_1+T_2\right)\left(T_1^2+T_2^2\right)}$

$\frac{1}{FA\sigma\left(T_1+T_2\right)\left(T_1^2-T_2^2\right)}$

$\frac{1}{FA\sigma\left(T_1^4-T_2^4\right)}$

$\frac{1}{FA\sigma\left(T_1^4+T_2^4\right)}$

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 (ε) 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 1000W/m^2 falls on the object. The energy absorbed by the object is 400 W/m^2 and energy transmitted is 350 W/m^2. 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 :

$\eta_{diesel\ cycle} > \eta_{dual\ cycle} > \eta_{otto\ cycle}$

$\eta_{diesel\ cycle} > \eta_{otto\ cycle} > \eta_{dual\ cycle}$

$\eta_{otto\ cycle} > \eta_{diesel\ cycle} > \eta_{dual\ cycle}$

$\eta_{otto\ cycle} > \eta_{dual\ cycle} > \eta_{diesel\ cycle}$

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

The entropy increase of the solid substance as it melts into liquid at 27^0C(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 :

1.0

0.75

0.5

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 :

$\oint dV = 0$

$\oint dP = 0$

$\oint dT = 0$

$\oint dQ = 0$

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 :

Queuing 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 $2x + y \leq 4 \quad x + 2y \geq 12, x \geq 0, y \geq 0$

Options :

10

20

30

No feasible solution

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

Shopkeeper handles only 1 person in 6minute 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 collimater

Vernier calliper

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

In work study, 'operation' is represented by

Options :

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