Question Paper Preview

Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name:	Mechanical Engineering 30th May 2018 Shift1
Subject Name:	Mechanical Engineering
Creation Date:	2018-05-30 12:38:05
Duration:	120
Total Marks:	120
Display Marks:	No
Calculator:	None
Magnifying Glass Required?:	No
Ruler Required?:	No
Eraser Required?:	No
Scratch Pad Required?:	No
Rough Sketch/Notepad Required?:	No
Protractor Required?:	No

Display Number Panel:	Yes
Group All Questions:	No

Question Number : 1 Question Id : 5113467561 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The matrix $A = \begin{bmatrix} 0 & 1 & -2 \\ -1 & 0 & 3 \\ 2 & -3 & 0 \end{bmatrix}$ is

Options :

1. ✖ symmetric

2. ✔ skew symmetric

3. ✖ orthogonal

4. ✖ unitary

Question Number : 2 Question Id : 5113467562 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The eigen values of A $=\begin{bmatrix} 6 & \sqrt{3} \\ \sqrt{3} & 4 \end{bmatrix}$ are

Options :

1. ✔ 3 , 7

2. ✖ 5 , 5

3. ✖ $4, -10$

4. ✖ 4, 6

Question Number : 3 Question Id : 5113467563 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\lim_{x \to 0} \frac{sin\,(\pi cos^2 x)}{x^2} = k$, then k =

Options :

1. ✖ 0 (zero)

2. ✖ 1

3. ✖ $\frac{\pi}{2}$

4. ✔ π

Question Number : 4 Question Id : 5113467564 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the mean of a distribution is 65 and median of the distribution is 70, then the mode of the distribution is

Options :

1. ✖ 50

2. ✖ 60

3. ✖ 70

4. ✔ 80

Question Number : 5 Question Id : 5113467565 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $f = xy^2i+2x^2yz\,j - 3yz^2k$,then div f at the point $(1,-1, 1)$

Options :

1. ✖ 2

2. ✖ 3

3. ✖ 6

4. ✔ 9

Question Number : 6 Question Id : 5113467566 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Given that $f(x) = x + \frac{1}{x}$ satisfies all the conditions of Rolle's mean value theorem in $[\frac{1}{2}, 2]$.Then the value of 'c ' of the mean value theorem is

Options :

1. ✖ 0(zero)

2. ✔ 1

3. ✖ $\frac{3}{2}$

4. ✖ 2

Question Number : 7 Question Id : 5113467567 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of the equation given that $(D^2 - D' - 2)Y = 3e^{2x}$ is

Options :

1. ✖ $y = c_1e^{2x} + c_2e^{-x} + xe^{2x}$

2. ✖ $y= c_1e^{2x} + c_2e^{x} + xe^{2x}$

3. ✔ $y= c_1e^{-2x} - c_2e^{-x} + xe^{2x}$

4. ✖ $y= c_1e^{2x} + c_2e^{-2x} - xe^{2x}$

Question Number : 8 Question Id : 5113467568 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If it is given that L $[\frac{\sin t}{t}] = tan^{-1}\frac{1}{s}$ then L $[\frac{\sin at}{t}] =$

Options :

1. ✔ $tan^{-1}\frac{1}{as}$

2. ✖ $tan^{-1}\frac{a}{s}$

3. ✖ $atan^{-1}\frac{1}{s}$

4. ✖ $tan^{-1}as$

Question Number : 9 Question Id : 5113467569 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The fixed point of $\omega = \frac{1}{z-2i}$ (where z is complex number) is

Options :

1. ✖ $2\,i$

2. ✔ $-2\,i$

3. ✖ i

4. ✖ $-i$

Question Number : 10 Question Id : 5113467570 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The residue of $f(z) = \frac{z^2}{(z-1)^2(z+2)}$ at $z = -2$ is

Options :

1. ✖ $\frac{4}{9}$

2. ✖ $\frac{1}{9}$

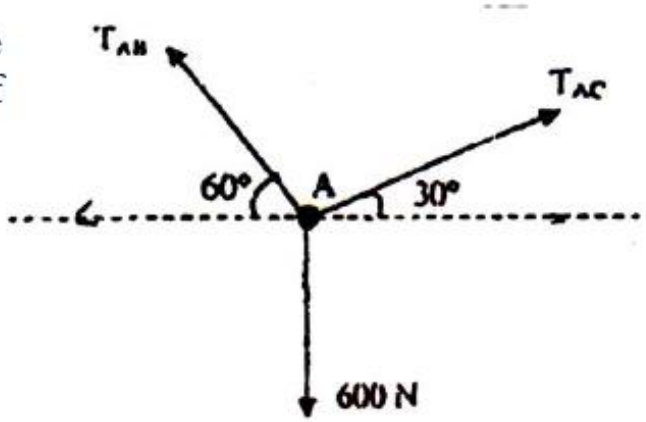
3. ✔ $\frac{2}{9}$

4. ✖ $\frac{2}{3}$

Display Number Panel: Yes
Group All Questions: No

Question Number : 11 Question Id : 5113467571 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If point A is in equilibrium under the action of applied forces, values of tensions T_{AB} and T_{AC} are respectively



Options :

1. ✔ 520 N and 300 N

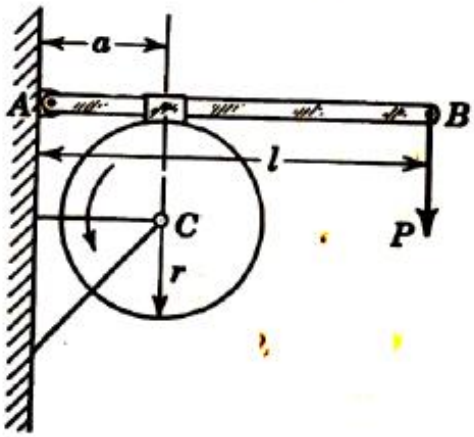
2. ✖ 300 N and 520 N

3. ✖ 450 N and 150 N

4. ✖ 150 N and 450 N

Question Number : 12 Question Id : 5113467572 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A heavy rotating drum of radius r is supported in bearings at C and is braked by the device shown in figure. If the coefficient of kinetic friction between drum and brake shoe is μ, the braking moment M_C with respect to point C is



Options :

1. ✖ $\frac{4\mu Plr}{a}$

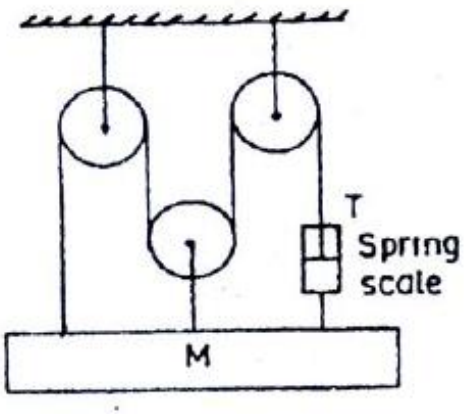
2. ✔ $\frac{\mu Plr}{a}$

3. ✖ $\frac{\mu Plr}{2a}$

4. ✖ $\frac{2\mu Plr}{3a}$

Question Number : 13 Question Id : 5113467573 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A spring scale indicates a tension T in the right hand cable of the pulley system shown in the figure. Neglecting the masses of the pulleys and ignoring the friction between the cable and pulley, the mass M is



Options :

1. ✖ $\frac{2T}{g}$

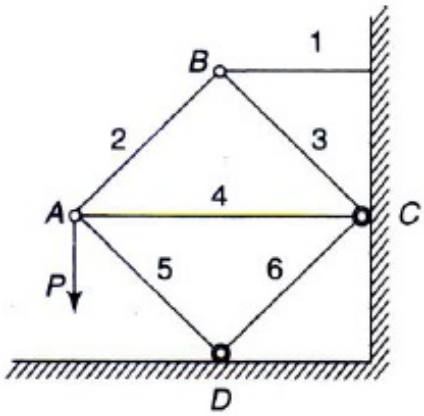
2. ✖ $\frac{T(1+e^{4\pi})}{g}$

3. ✔ $\frac{4T}{g}\mu$

4. ✖ $\frac{T}{g}$

Question Number : 14 Question Id : 5113467574 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Determine the axial force in the member AB of the plane truss supported and loaded as shown in the figure ABCD is a square, AC is horizontal.



Options :

1. ✖ P

2. ✔ $0.707P$

3. ✖ $2P$

4. ✖ 0

Question Number : 15 Question Id : 5113467575 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A ball is dropped from a height of 2.25 m on a smooth floor and it rises to a height of 1 m after the first bounce. Coefficient of restitution between the ball and the floor is

Options :

1. ✖ 0.57

2. ✖ 0.44

3. ✖ 0.33

4. ✔ 0.67

Question Number : 16 Question Id : 5113467576 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A uniform chain of mass m and length l lies on a smooth table such that one fourth of its length is hanging vertically down over the edge of the table. Work done to pull the hanging part of the chain on to the table is

Options :

1. ✖ mgl

2. ✖ $mgl/4$

3. ✖ $mgl/16$

4. ✔ $mgl/32$

Question Number : 17 Question Id : 5113467577 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Ratio of moment of inertia of a rectangle and that of a triangle, having same base and height with respect to their bases will be

Options :

1. ✖ 2: 1

2. ✖ 3: 1

3. ✔ 4: 1

4. ✖ 5: 1

Question Number : 18 Question Id : 5113467578 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two stones are projected with the same velocity (in magnitudes) but making different angles with the horizontal. If their ranges are equal and the angle of projection of one (stone 1) is 60^o then the ratio of maximum heights attained $(\frac{H_2}{H_1})$

Options :

1. ✖ 3: 1

2. ✖ 2: 1

3. ✖ 1: 2

4. ✔ 1: 3

Question Number : 19 Question Id : 5113467579 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For ductile materials the most appropriate theory of failure is

Options :

1. ✔ Maximum Shear Stress Theory

2. ✖ Maximum Principal Stress Theory

3. ✖ Maximum Principal Strain Theory

4. ✖ Distortion Energy Theory

Question Number : 20 Question Id : 5113467580 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

State of plane stress at a point is given by $\sigma_x = -200\ MPa$, $\sigma_y = 100\ MPa$ and $\tau_{xy} = 100\ MPa$. The maximum shear stress (in MPa) is

Options :

1. ✖ 11.8

2. ✖ 150.1

3. ✔ 180.3

4. ✖ 223.6

Question Number : 21 Question Id : 5113467581 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A cantilever AB of length l has fixed A and free end B. It is loaded by applying a concentrated load W at the midpoint C of the cantilever. The deflections at point C and B respectively will be

Options :

1. ✔ $\frac{Wl^3}{24EI}, \frac{5Wl^3}{48EI}$

2. ✖ $\frac{Wl^3}{12EI}, \frac{3Wl^3}{48EI}$

3. ✖ $\frac{5Wl^3}{48EI}, \frac{Wl^3}{24EI}$

4. ✖ $\frac{Wl^3}{24EI}, \frac{Wl^3}{48EI}$

Question Number : 22 Question Id : 5113467582 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The distribution of shear stress over a rectangular cross-sectioned beam is

Options :

1. ✔ parabolic

2. ✖ circular

3. ✖ straight line

4. ✖ elliptical

Question Number : 23 Question Id : 5113467583 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A simply supported beam of length 3 m carries a concentrated load of 12 kN at a distance of 1 m from left support. Maximum bending moment in the beam is

Options :

1. ✖ $12\ kNm$

2. ✖ $24\ kNm$

3. ✔ $8\ kNm$

4. ✖ $16\ kNm$

Question Number : 24 Question Id : 5113467584 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A solid shaft of diameter D carries a twisting moment that develops maximum shear stress τ. If the shaft is replaced by a hollow one of outside diameter D and inside diameter $D/2$, then the maximum shear stress will be

Options :

1. ✔ 1.067τ

2. ✖ 5.143τ

3. ✖ 0.213τ

4. ✖ 2.231τ

Question Number : 25 Question Id : 5113467585 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A close coiled helical spring has to absorb $50\ Nm$ of energy when compressed to $5\ cm$. The coil diameter is 8 times the wire diameter. If there are 10 coils, estimate the diameter of coil and maximum shear stress. $G = 85{,}000\ N/mm^2$

Options :

1. ✖ $250\ mm, 120\ N/mm^2$

2. ✖ $87\ mm, 198\ N/mm^2$

3. ✔ $154\ mm, 108\ N/mm^2$

4. ✖ $358\ mm, 68\ N/mm^2$

Question Number : 26 Question Id : 5113467586 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The buckling load for a column pinned at both ends is $10\ kN$. If the ends are fixed then the buckling load changes to

Options :

1. ✔ $40\ kN$

2. ✖ $2.5\ kN$

3. ✖ $5\ kN$

4. ✖ $20\ kN$

Question Number : 27 Question Id : 5113467587 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A thick cylinder $500\ mm$ external diameter and $400\ mm$ internal diameter is subjected simultaneously to internal and external pressure. If the internal pressure is $25\ MPa$ and the hoop stress at the inside of the cylinder is $45\ MPa$ (tensile), determine the intensity of the external pressure.

Options :

1. ✔ $12.4\ MPa$

2. ✖ $24.8\ MPa$

3. ✖ $6.5\ MPa$

4. ✖ $52.2\ MPa$

Question Number : 28 Question Id : 5113467588 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Tooth profile most commonly used in gear drives for power transmission is

Options :

1. ✖ a cycloid

2. ✔ an involute

3. ✖ an ellipse

4. ✖ a parabola

Question Number : 29 Question Id : 5113467589 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A fixed gear having 100 teeth meshes with another gear having 25 teeth, the centre lines of both the gears being joined by an arm so as to form an epicyclic gear train. The number of rotations made by the smaller gear for one rotation of the arm is

Options :

1. ✖ 3

2. ✖ 4

3. ✔ 5

4. ✖ 6

Question Number : 30 Question Id : 5113467590 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Governor sensitivity is the ratio of

Options :

1. ✔ range of speed to the mean speed

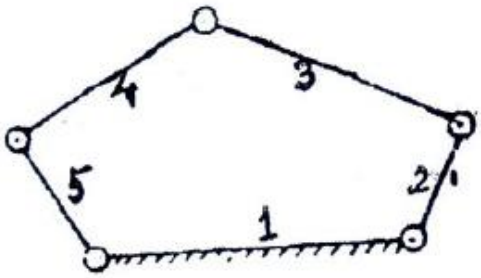
2. ✖ maximum speed to the mean speed

3. ✖ mean speed to the range of speed

4. ✖ effort of governor to the range of speed

Question Number : 31 Question Id : 5113467591 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The number of degrees of freedom of a five link plane mechanism with five revolute pairs as shown in the figure is



Options :

1. ✖ 3

2. ✖ 4

3. ✔ 2

4. ✖ 1

Question Number : 32 Question Id : 5113467592 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For the spring – mass system shown in the figure, the frequency of vibration is N. What will be the frequency when one more similar spring is added in series as shown in the figure?

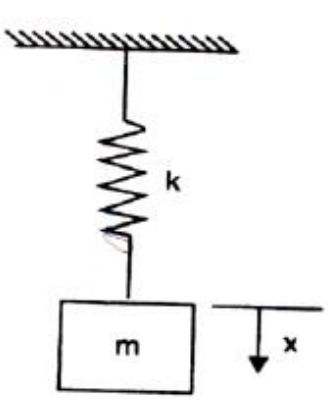


Figure A

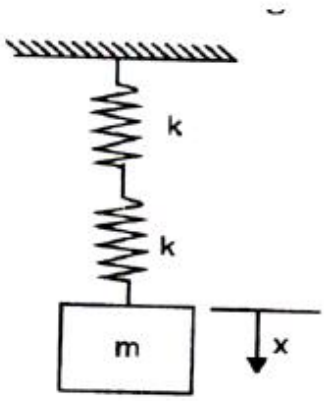


Figure B

Options :

1. ✖ $\frac{N}{2}$

2. ✖ $\frac{\sqrt{2}}{N}$

3. ✔ $\frac{N}{\sqrt{2}}$

4. ✖ $2N$

Question Number : 33 Question Id : 5113467593 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For critical damping, the damping factor (ξ) will be

Options :

1. ✖ $\xi > 1$

2. ✖ $\xi < 1$

3. ✔ $\xi = 1$

4. ✖ $\xi = 0$

Question Number : 34 Question Id : 5113467594 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The number of degrees of freedom in a vibrating beam (assuming it to be a continuous system) would be

Options :

1. ✖ zero

2. ✖ one

3. ✖ two

4. ✔ infinite

Question Number : 35 Question Id : 5113467595 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Property of material due to which it can be rolled or hammered into thin sheets is called

Options :

1. ✖ brittleness

2. ✖ ductility

3. ✔ malleability

4. ✖ fatigue

Question Number : 36 Question Id : 5113467596 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Amorphous material is

Options :

1. ✔ glass

2. ✖ silver

3. ✖ lead

4. ✖ zinc

Question Number : 37 Question Id : 5113467597 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The total atoms in face centred cubic (FCC) structure unit cell is

Options :

1. ✖ 6

2. ✔ 4

3. ✖ 14

4. ✖ 24

Question Number : 38 Question Id : 5113467598 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The main purpose of spheroidising is to improve

Options :

1. ✖ hardenability of low carbon steel

2. ✖ machinability of low carbon steel

3. ✖ hardenability of high carbon steel

4. ✔ machinability of high carbon steel

Question Number : 39 Question Id : 5113467599 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

German silver contains

Options :

1. ✖ 1 % silver

2. ✖ 10 % silver

3. ✖ 5 % silver

4. ✔ 0 % silver

Question Number : 40 Question Id : 5113467600 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A two dimensional flow field has velocities along x and y directions given by $u = x^2t$ and $v = -2xyt$ respectively, where t is time. Equation of streamline is

Options :

1. ✔ $x^2y = constant$

2. ✖ $xy^2 = constant$

3. ✖ $xy = constant$

4. ✖ not possible to determine

Question Number : 41 Question Id : 5113467601 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When a body floating in a liquid is slightly displaced, it oscillates about

Options :

1. ✖ centre of gravity

2. ✖ centre of pressure

3. ✖ centre of buoyancy

4. ✔ metacentre

Question Number : 42 Question Id : 5113467602 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A plate 1 mm distant from a fixed plate moves at 0.25 m/s and requires a force per unit area of 1 Pa to maintain this speed. The viscosity of the fluid between the plates is

Options :

1. ✖ $0.4\ Ns/m^2$

2. ✖ $0.04\ Ns/m^2$

3. ✔ $0.004\ Ns/m^2$

4. ✖ $0.0004\ Ns/m^2$

Question Number : 43 Question Id : 5113467603 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A 25 cm diameter pipe carries oil of specific gravity 0.9 at a velocity of 3 m/s. At another section the diameter is 20 cm. The mass flow rate of flow of oil is

Options :

1. ✔ $132.22\ kg/s$

2. ✖ $130.32\ kg/s$

3. ✖ $134.23\ kg/s$

4. ✖ $136.22\ kg/s$

Question Number : 44 Question Id : 5113467604 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Isentropic process is

Options :

1. ✔ reversible adiabatic

2. ✖ irreversible adiabatic

3. ✖ frictionless fluid flow process

4. ✖ quasi-static process

Question Number : 45 Question Id : 5113467605 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a reversible cycle, the source temperature is 227^oC and the sink temperature is 27^oC. The maximum available work for a heat input of 100 kJ will be

Options :

1. ✖ 100 kJ

2. ✖ 60 kJ

3. ✔ 40 kJ

4. ✖ 88 kJ

Question Number : 46 Question Id : 5113467606 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Area of $p - V$ diagram for the $Carnot\ cycle$ represents

Options :

1. ✖ heat supplied

2. ✖ heat rejected

3. ✔ work done

4. ✖ temperature drop

Question Number : 47 Question Id : 5113467607 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Three metal walls of the same cross sectional area having thermal conductivities in the ratio $1:2:4$, transfer heat at the rate of $6000\ kJ/hr$. For the same wall thickness, the temperature drops will be in the ratio of

Options :

1. ✖ $1:2:4$

2. ✔ $1:\frac{1}{2}:\frac{1}{4}$

3. ✖ $\frac{1}{4}:\frac{1}{2}:1$

4. ✖ $1:1:1$

Question Number : 48 Question Id : 5113467608 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A $1000\ kg$ vehicle travelling at $80\ m/s$ impacts a plunger attached to a piston cylinder arrangement. If all of the energy of the vehicle is absorbed by the $20\ kg$ liquid contained in the cylinder. What is the maximum temperature rise of the liquid? The specific heat of the liquid is $4.0\ kJ/kg$.

Options :

1. ✖ 55^oC

2. ✖ 50^oC

3. ✖ 45^oC

4. ✔ 40^oC

Question Number : 49 Question Id : 5113467609 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Large spherical enclosure has a small opening. Rate of emission of radioactive flux through this opening is 7.35 kW/m^2 . The temperature at the inner surface of the sphere will be about (assume Stefan Boltzman constant, $\sigma = 5.67 \times 10^{-8}\ W/m^2K^4$)

Options :

1. ✖ 600^oC

2. ✔ 330^oC

3. ✖ 100^oC

4. ✖ 727^oC

Question Number : 50 Question Id : 5113467610 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a counter flow heat exchange the hot fluid enters at 60^oC and cold fluid leaves at 30^oC. Mass flow rate of the hot fluid is 1 kg/s and that of the cold fluid is 2 kg/s. Specific heat of the hot fluid is 10 kJ/kgK and that of the cold fluid is 5 kJ/kgK. The LMTD for the heat exchanger in °C is

Options :

1. ✖ 15

2. ✔ 30

3. ✖ 35

4. ✖ 45

Question Number : 51 Question Id : 5113467611 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Ratio of sensible heat to total heat is called

Options :

1. ✖ specific humidity

2. ✖ relative humidity

3. ✖ humidity factor

4. ✔ sensible heat factor

Question Number : 52 Question Id : 5113467612 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The subcooling in a refrigeration cycle

Options :

1. ✔ increases COP

2. ✖ reduce cooling

3. ✖ increases work of compression

4. ✖ reduce condenser size

Question Number : 53 Question Id : 5113467613 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A solar based heat engine which receives 80 kJ of heat at 100^oC and rejects 70 kJ of heat to the ambient at 30^oC is designed. The thermal efficiency of the heat engine is

Options :

1. ✖ 70 %

2. ✖ 1.88 %

3. ✔ 12.5 %

4. ✖ 20 %

Question Number : 54 Question Id : 5113467614 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Timing of the exhaust valve affects

Options :

1. ✖ mechanical efficiency

2. ✔ volumetric efficiency

3. ✖ indicated thermal efficiency

4. ✖ fuel efficiency

Question Number : 55 Question Id : 5113467615 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For an engine operating with rich mixtures, the optimum spark timing

Options :

1. ✔ must be advanced

2. ✖ must be retarded

3. ✖ must be at TDC

4. ✖ is constant

Question Number : 56 Question Id : 5113467616 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Knocking takes place in CI engines

Options :

1. ✔ at the start of combustion

2. ✖ at the end of combustion

3. ✖ during combustion

4. ✖ at top dead center at the end of compression stroke

Question Number : 57 Question Id : 5113467617 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

LVDT is used to measure

Options :

1. ✖ crank angle

2. ✖ engine speed

3. ✔ large displacements

4. ✖ gas temperature

Question Number : 58 Question Id : 5113467618 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Economiser is used to provide enriched mixture during

Options :

1. ✖ starting

2. ✖ idling

3. ✖ cruising

4. ✔ full throttle operation

Question Number : 59 Question Id : 5113467619 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Cores are used to

Options :

1. ✔ make desired recess in castings

2. ✖ strengthen moulding sand

3. ✖ support lose pieces

4. ✖ remove pattern easily

Question Number : 60 Question Id : 5113467620 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two streams of liquid metal which are not hot enough to fuse properly results into a casting defect known as

Options :

1. ✔ cold shut

2. ✖ swell

3. ✖ sand wash

4. ✖ scab

Question Number : 61 Question Id : 5113467621 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Discontinuous chips are formed during machining of

Options :

1. ✔ Cast Iron

2. ✖ Mild Steel

3. ✖ Aluminium

4. ✖ Brass

Question Number : 62 Question Id : 5113467622 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A carbide tool with mild steel workpiece was found to give life of 2 $hours$ while cutting at 50 m/min. Assume $VT^{0.27} = C$. If same tool is used at a speed 25 % higher than the previous then tool life will be

Options :

1. ✖ 40.05 min

2. ✖ 45.05 min

3. ✖ 49.05 min

4. ✔ $52\ min$

Question Number : 63 Question Id : 5113467623 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the electro-discharge machining process, the workpiece and the electrode are submerged in

Options :

1. ✔ a dielectric fluid

2. ✖ an abrasive slurry

3. ✖ an electrolytic solution

4. ✖ vacuum

Question Number : 64 Question Id : 5113467624 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In an arc welding process, the voltage and current are 25 V and 300 Amp respectively. The arc heat transfer efficiency is 0.85 and welding speed is 8 mm/s. The net heat input $(in\ J/mm)$ is

Options :

1. ✖ 64

2. ✔ 797

3. ✖ 1103

4. ✖ 79700

Question Number : 65 Question Id : 5113467625 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Consumable electrodes are used in the process of

Options :

1. ✖ TIG welding

2. ✔ MIG welding

3. ✖ Thermite welding

4. ✖ Laser welding

Question Number : 66 Question Id : 5113467626 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Gears are best mass produced by

Options :

1. ✖ milling

2. ✔ hobbing

3. ✖ shaping

4. ✖ forming

Question Number : 67 Question Id : 5113467627 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Blanking and piercing operations can be performed simultaneously in

Options :

1. ✖ simple die

2. ✖ progressive die

3. ✔ compound die

4. ✖ combination die

Question Number : 68 Question Id : 5113467628 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A hole is specified as $40^{0.050}_{0.000}\ mm$. The mating shaft has a clearance fit with minimum clearance of $0.01\ mm$. The tolerance on the shaft is $0.04\ mm$. The maximum clearance *in* mm between the hole and the shaft is

Options :

1. ✖ *0.04*

2. ✖ *0.05*

3. ✔ *0.10*

4. ✖ *0.11*

Question Number : 69 Question Id : 5113467629 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The most commonly used criteria for measuring forecast error is

Options :

1. ✖ mean absolute deviation

2. ✖ mean absolute personal error

3. ✖ mean standard error

4. ✔ mean square error

Question Number : 70 Question Id : 5113467630 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Kanban is Japanese term indicating

Options :

1. ✖ method of line balancing

2. ✔ information for production and withdrawal of items

3. ✖ priority dispatching

4. ✖ line time employment

Question Number : 71 Question Id : 5113467631 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Sequencing is subset of

Options :

1. ✖ routing

2. ✔ scheduling

3. ✖ expediting

4. ✖ Queuing

Question Number : 72 Question Id : 5113467632 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

CPM is

Options :

1. ✖ time oriented technique

2. ✔ activity oriented technique

3. ✖ event oriented technique

4. ✖ work oriented technique

Question Number : 73 Question Id : 5113467633 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Flexible manufacturing allows

Options :

1. ✖ factory management

2. ✖ automated design

3. ✖ tool design

4. ✔ quick and inexpensive product change

Question Number : 74 Question Id : 5113467634 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

NC contouring is an example of

Options :

1. ✔ continuous path positioning

2. ✖ point-to-point positioning

3. ✖ absolute positioning

4. ✖ incremental positioning

Question Number : 75 Question Id : 5113467635 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A ball impinges directly upon another ball at rest and itself comes to rest due to impact. If half of the initial kinetic energy is destroyed in collision, the coefficient of restitution will be

Options :

1. ✖ 1

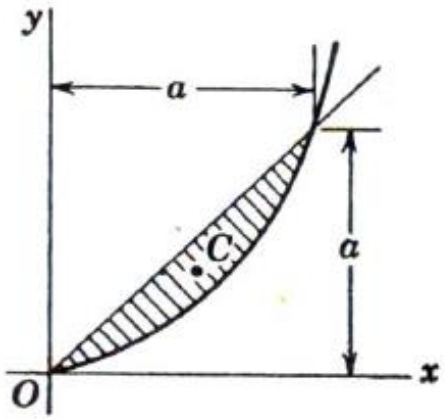
2. ✔ 0.5

3. ✖ 0.25

4. ✖ $1/\sqrt{2}$

Question Number : 76 Question Id : 5113467636 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Determine the coordinates x_c and y_c of the centroid of the area between the parabola $y = \frac{x^2}{a}$ and the straight line $y = x$



Options :

1. ✖ $x_c = \frac{a}{2}, y_c = \frac{a}{5}$

2. ✖ $x_c = \frac{a}{3}, y_c = \frac{2a}{5}$

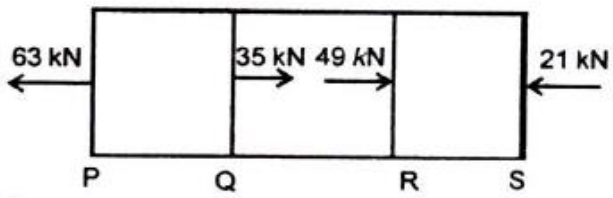
3. ✖ $x_c = \frac{a}{2}, y_c = \frac{2a}{3}$

4. ✔ $x_c = \frac{a}{2}, y_c = \frac{2a}{5}$

Question Number : 77 Question Id : 5113467637 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A bar having cross sectional area of 700 $mm^2$is subjected to axial load at the positions indicated.

The value of stress in the segment QR is



Options :

1. ✔ $40\ MPa$

2. ✖ $50\ MPa$

3. ✖ $70\ MPa$

4. ✖ $120\ MPa$

Question Number : 78 Question Id : 5113467638 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The load on a bolt consists of an axial pull of 10 kN together with a transverse shear force of 5 kN. Estimate the diameter of bolt required according to maximum principal stress theory. Elastic limit in tension is 270 N/mm^2 and factor of safety of 3 is to be applied. Poisson's ratio is 0.3.

Options :

1. ✖ $5.1\ mm$

2. ✖ $33.1\ mm$

3. ✔ $13.1\ mm$

4. ✖ $17.1\ mm$

Question Number : 79 Question Id : 5113467639 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A timber beam of rectangular cross section has a span of 5 m and is simply supported at its ends. It is required to carry a total load of 40 kN uniformly distributed over the whole span. Find the minimum value of breadth (b) and depth (d) if the maximum bending stress is not to exceed 7 MPa and the maximum defelection is limited to 10 mm. $E = 10.5\ GPa$.

Options :

1. ✖ $b = 2.198\ m, d = 1.345\ m$

2. ✖ $b = 6.145\ m, d = 9.323\ m$

3. ✖ $b = 0.132\ m, d = 3.317\ m$

4. ✔ $b = 0.178\ m, d = 0.347\ m$

Question Number : 80 Question Id : 5113467640 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For a case of slender column of length L and flexural rigidity EI built-in at its base and free at the top, the Euler critical buckling load is

Options :

1. ✖ $\frac{3\pi^2 EI}{L^2}$

2. ✖ $\frac{4\pi^2 EI}{L^2}$

3. ✖ $\frac{2\pi^2 EI}{L^2}$

4. ✔ $\frac{\pi^2 EI}{4L^2}$

Question Number : 81 Question Id : 5113467641 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The number of inversions for a slider crank mechanism is

Options :

1. ✖ 6

2. ✖ 5

3. ✔ 4

4. ✖ 3

Question Number : 82 Question Id : 5113467642 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A flywheel of moment of inertia 9.8 $kg\ m^2$ fluctutes by 30 rpm for a fluctuation in energy of 1936 $Joules$. The mean speed of the flywheel is

Options :

1. ✔ 600 rpm

2. ✖ 2940 rpm

3. ✖ 900 rpm

4. ✖ 1000 rpm

Question Number : 83 Question Id : 5113467643 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For a self-locking screw-jack the efficiency must be

Options :

1. ✖ equal to 50 %

2. ✔ less than 50 %

3. ✖ greater than 50 %

4. ✖ 100 %

Question Number : 84 Question Id : 5113467644 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A machine mounted on a single coil spring has a period of free vibration of T. If the spring is cut into four equal parts and placed in parallel and the machine is mount on them then the period of free vibration of the new system will become

Options :

1. ✖ $16T$

2. ✔ $T/4$

3. ✖ $T/16$

4. ✖ $4T$

Question Number : 85 Question Id : 5113467645 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Babbit metal is

Options :

1. ✖ Cu based alloy

2. ✔ Sn based alloy

3. ✖ Cd based alloy

4. ✖ Al based alloy

Question Number : 86 Question Id : 5113467646 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The following types of materials are usually the most ductile

Options :

1. ✔ Face centred cubic lattice

2. ✖ Body centred cubic lattice

3. ✖ Hexagonal close packed lattice

4. ✖ Face centred and body centred cubic lattices

Question Number : 87 Question Id : 5113467647 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Bronze is an alloy of

Options :

1. ✖ Copper and zinc

2. ✔ Copper and tin

3. ✖ Copper, tin and zinc

4. ✖ Copper and lead

Question Number : 88 Question Id : 5113467648 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Rain drops are spherical because of

Options :

1. ✖ viscosity

2. ✖ air resistance

3. ✔ surface tension

4. ✖ atmospheric pressure

Question Number : 89 Question Id : 5113467649 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Cavitation is caused by

Options :

1. ✖ high velocity

2. ✖ high temperature

3. ✖ high pressure

4. ✔ low pressure

Question Number : 90 Question Id : 5113467650 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A stationary mass of gas is compressed without friction from an initial state of 0.3 m^3 and 0.105 MPa to a final state of 0.15 $m^3$and 0.105 MPa, the pressure remaining constant during the process. There is a transfer of 37.6 kJ of heat from the gas during the process. How much does the internal energy of the gas change?

Options :

1. ✔ $-21.85\ kJ$

2. ✖ $11.85\ kJ$

3. ✖ $-11.85\ kJ$

4. ✖ $-52.12\ kJ$

Question Number : 91 Question Id : 5113467651 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A cyclic heat engine operates between a source temperature of 800^oC and a sink temperature of 30^oC. What is the least rate of heat rejection $per\ kW$net output of the engine?

Options :

1. ✖ $10.122\ kW$

2. ✖ $4.323\ kW$

3. ✖ $8.752\ kW$

4. ✔ $0.392\ kW$

Question Number : 92 Question Id : 5113467652 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a *Carnot* cycle heat is rejected at constant

Options :

1. ✖ volume

2. ✔ temperature

3. ✖ pressure

4. ✖ entropy

Question Number : 93 Question Id : 5113467653 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A hollow enclosure is formed between two infinitely long concentric cylinders of radii 1 m and 2 m respectively. Radiative heat exchange takes place between the inner surface of the larger cylinder and the outer surface of the smaller cylinder. Radiating surfaces are diffused and medium in the enclosure is non-participating. The fraction of the thermal radiation leaving the larger surface and striking itself is

Options :

1. ✖ *0.25*

2. ✔ *0.5*

3. ✖ *0.75*

4. ✖ *1.0*

Question Number : 94 Question Id : 5113467654 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The temperature of air recorded by thermometer when it is not affected by the moisture content in the air is called

Options :

1. ✖ wet bulb temperature

2. ✔ dry bulb temperature

3. ✖ dew point temperature

4. ✖ Critical Temperature

Question Number : 95 Question Id : 5113467655 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Oil separator in a refrigeration cycle is installed

Options :

1. ✖ before compressor

2. ✔ between compressor and condenser

3. ✖ between compressor and evaporator

4. ✖ between compressor and expansion valve

Question Number : 96 Question Id : 5113467656 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An engine working on Otto cycle has the following conditions: Pressure at the beginning of the compression is $1\ bar$ and the pressure at the end of compression is $11\ bar$. Calculate the compression ratio and air-standard efficiency of the engine. Assume $\gamma = 1.4$

Options :

1. ✔ $5.54, 49.6\%$

2. ✖ $2.31, 298\%$

3. ✖ $7.52, 69.9\%$

4. ✖ $11.24, 29.1\%$

Question Number : 97 Question Id : 5113467657 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A perfect engine works on Carnot cycle between 727^oC and 227^oC. The efficiency of the engine is

Options :

1. ✔ 0.5

2. ✖ 2

3. ✖ $\frac{227}{727}$

4. ✖ $\frac{727}{227}$

Question Number : 98 Question Id : 5113467658 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Morse test is applicable only to

Options :

1. ✖ single cylinder SI engines

2. ✖ single cylinder CI engines

3. ✔ multi-cylinder CI engines

4. ✖ single and multi-cylinder CI and SI engines

Question Number : 99 Question Id : 5113467659 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Seebeck effect is used in

Options :

1. ✖ thermistors

2. ✔ thermocouples

3. ✖ RTD

4. ✖ hot wire sensors

Question Number : 100 Question Id : 5113467660 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An expendable pattern is used in

Options :

1. ✖ slush casting

2. ✖ squeeze casting

3. ✖ centrifugal casting

4. ✔ investment casting

Question Number : 101 Question Id : 5113467661 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a sand casting operation the total liquid head is maintained constant such that it is equal to the mould height. The time taken to fill the mould with a top gate is t_A. If the same mould is filled with the bottom gate, the time taken is t_B. Ignore the time required to fill the runner and frictional effects. Assume atmospheric pressure at the top molten metal surfaces. The relation between t_A and t_B is

Options :

1. ✖ $t_B = \sqrt{2}t_A$

2. ✖ $t_B = 2t_A$

3. ✔ $t_B = t_A/\sqrt{2}$

4. ✖ $t_B = 2\sqrt{2}t_A$

Question Number : 102 Question Id : 5113467662 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Among the conventional machining processes the maximum specific energy is consumed in

Options :

1. ✖ turning

2. ✖ drilling

3. ✖ planning

4. ✔ grinding

Question Number : 103 Question Id : 5113467663 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In an Electro-Discharge Machining (EDM), the tool is made of

Options :

1. ✔ Copper

2. ✖ High Speed Steel

3. ✖ Cast Iron

4. ✖ Plane Carbon Steel

Question Number : 104 Question Id : 5113467664 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In MIG welding, *Helium* or *Argon* is used in order to

Options :

1. ✖ provide cooling effect

2. ✖ act as flux

3. ✔ act as shielding medium

4. ✖ enhance oxidation process

Question Number : 105 Question Id : 5113467665 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Autocollimator is used to check

Options :

1. ✖ roughness

2. ✖ flatness

3. ✔ angle

4. ✖ automobile balance

Question Number : 106 Question Id : 5113467666 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Chart which is used for scheduling and control is

Options :

1. ✖ Kanban

2. ✔ Gantt

3. ✖ Flow process chart

4. ✖ $\bar{X}$ and R chart

Question Number : 107 Question Id : 5113467667 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In PERT, the distribution of activity times is assumed to be

Options :

1. ✖ Normal

2. ✖ Gamma

3. ✔ Beta

4. ✖ Exponential

Question Number : 108 Question Id : 5113467668 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In Automobiles the power is transmitted from gear box to differential through

Options :

1. ✖ Bevel Gear

2. ✖ Universal Joint

3. ✔ Hooke's Joint

4. ✖ Knuckle Joint

Question Number : 109 Question Id : 5113467669 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The broaching operation in which the work moves past the stationery tool is called

Options :

1. ✖ Pull broaching

2. ✖ Push broaching

3. ✔ Surface broaching

4. ✖ Full broaching

Question Number : 110 Question Id : 5113467670 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Weldability is poorest in case of

Options :

1. ✖ Wrought Iron

2. ✖ Low carbon steel

3. ✔ High carbon steel

4. ✖ Plain carbon steel

Question Number : 111 Question Id : 5113467671 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The word castor in automobile is associated with

Options :

1. ✖ Braking system

2. ✖ Lubrication system

3. ✔ Front axle alignment

4. ✖ Transmission system

Question Number : 112 Question Id : 5113467672 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following material requires a large shrinkage allowance while making a pattern

Options :

1. ✖ Alumimium

2. ✖ Brass

3. ✖ Cast Iron

4. ✔ Plain Carbon Steel

Question Number : 113 Question Id : 5113467673 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The most preferred process for casting a turbine blade is

Options :

1. ✖ Die casting

2. ✖ Shell Moulding

3. ✔ Investment moulding

4. ✖ Sand casting

Question Number : 114 Question Id : 5113467674 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An idler pulley is used

Options :

1. ✖ for frequent stoppage of motion

2. ✔ to maintain requisite tension in the belt

3. ✖ to change the direction motion of the belt

4. ✖ to run only during non load periods

Question Number : 115 Question Id : 5113467675 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When the dry bulb and wet bulb temperature of air are same, then relative humidity of air will be

Options :

1. ✔ zero percent

2. ✖ 50 percent

3. ✖ 66.7 percent

4. ✖ 100 percent

Question Number : 116 Question Id : 5113467676 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The domestic refrigerator works on

Options :

1. ✖ Bell coleman cycle

2. ✖ Brayton cycle

3. ✖ Joule cycle

4. ✔ Vapour compression cycle

Question Number : 117 Question Id : 5113467677 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In free convection heat transfer, transition from laminar to turbulent flow is governed by

Options :

1. ✖ Reynolds number

2. ✖ Grashof number

3. ✖ Reynolds number and grashof number

4. ✔ Grashof number and prandtl number

Question Number : 118 Question Id : 5113467678 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The fluids used in the Electrolux refrigerator are

Options :

1. ✖ Water and hydrogen

2. ✖ Ammonia and hydrogen

3. ✔ Ammonia, water and hydrogen

4. ✖ CFC, HCFC

Question Number : 119 Question Id : 5113467679 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The internal energy of an ideal gas is function of

Options :

1. ✖ pressure only

2. ✔ absolute temperature only

3. ✖ pressure and volume

4. ✖ pressure , volume and temperature

Question Number : 120 Question Id : 5113467680 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An Allen bolt is

Options :

1. ✖ self-locking bolt

2. ✖ same as stud

3. ✔ provided with hexagonal depression in head

4. ✖ used in high speed components