Question Paper Preview

Subject Name: Mechanical Engineering

Display Number Panel: Yes
Group All Questions: No

Question Number : 1 Question Id : 7621614201 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $A = \begin{bmatrix} \cos\theta & \sin\theta & 0 \\ \sin\theta & \cos\theta & 0 \\ 2 & -4 & 1 \end{bmatrix}$ is a singular matrix , then $\theta =$

Options :

1. $\frac{\pi}{4}$
2. $\frac{\pi}{2}$
3. $\frac{\pi}{3}$
4. $\frac{\pi}{6}$

Question Number : 2 Question Id : 7621614202 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The system of equations $3x - y + 4z = 3$, $x + 2y - 3z = -2$ and $6x + 5y + \lambda z = -3$,

has atleast one solution when $\lambda =$

Options :

1. 3
2. -3
3. 5
4. -5

Question Number : 3 Question Id : 7621614203 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y = 5^{x^3+3x}$, then $\frac{dy}{dx} =$

Options :

1. $[3x^2 + 3]\,5^{x^3+3x}$

2. $5^{x^3+3x}\ (\log 5)\,[3x^2+3]$

3. $5^{x^3+3x}\ \log\,[3x^2+3]$

4. $[3x^2+3]\log 5$

Question Number : 4 Question Id : 7621614204 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$z = (1-2xy+y^2)^{-1/2}$ then $x\frac{\partial z}{\partial x} - y\frac{\partial z}{\partial y} =$

Options :

1. y^2z^2

2. y^2z^3

3. $\frac{1}{2}y^2z^3$

4. $\frac{z}{2}\ [1+yz]$

Question Number : 5 Question Id : 7621614205 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of the equation $\frac{dy}{dx} + (\sec x)\,y = \tan x\,.\,(0 \le x < \frac{\pi}{2})$ is

Options :

1. $y = \sec x + \tan x + c$

2. $y\,(\sec x + \tan x) = \sec x + \tan x + c$

3. $y\,(\sec x + \tan x) = \sec x + \tan x - x + c$

4. $y\,(\sec x + \tan x) = \tan x + c$

Question Number : 6 Question Id : 7621614206 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of the initial value problem $y'' + y = 0$, given $y(0) = 2\ ,\ y'(0) = -1$ is

Options :

1. $y = 2\cos x + \sin x$

2. $y = 2\cos x - \sin x$

3. $y = \cos x - \sin x$

4. $y = \cos x + 2\sin x$

Question Number : 7 Question Id : 7621614207 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the divergence of $F = (x+z)\hat{i} + (3x+\lambda y)\,j + (x-5z)\,k$ is zero, then the value of λ is

Options :

1. 1
2. 3
3. 4
4. 5

Question Number : 8 Question Id : 7621614208 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The unit vector normal to the surface $\phi(x, y, z) = x^3 - xyz + z^3 - 1$ at the point $(1,1,1)$ is

Options :

1. $\frac{2i-j+2k}{3}$
2. $\frac{i-2j+2k}{3}$
3. $\frac{2i-j-2k}{3}$
4. $\frac{2i+j+2k}{3}$

Question Number : 9 Question Id : 7621614209 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Laplace transform of $t \cos 2t$ is

Options :

1. $\frac{s}{s^2+4}$
2. $\frac{s^2-4}{s^2+4}$
3. $\frac{s^2-4}{(s^2+4)^2}$
4. $\frac{s^2}{(s^2+4)^2}$

Question Number : 10 Question Id : 7621614210 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

Options :

1. $-\frac{1}{9}$
2. $\frac{1}{9}$

3. $-\frac{2}{9}$

4. $\frac{2}{9}$

Display Number Panel: Yes
Group All Questions: No

Question Number : 11 Question Id : 7621614211 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A cycle consisting of _____ and two isothermal processes is known as Stirling cycle.

Options :

1. Two isentropic

2. One constant pressure, one constant volume

3. Two constant volumes

4. Two constant pressures

Question Number : 12 Question Id : 7621614212 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is an intensive property of a thermodynamic system?

Options :

1. Mass

2. Temperature

3. Energy

4. Volume

Question Number : 13 Question Id : 7621614213 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A perfect gas at 27 °C is heated at constant pressure till its volume is doubled. The final temperature is

Options :

1. 54 °C

2. 654 °C

3. 108 °C

4. 327 °C

Question Number : 14 Question Id : 7621614214 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The thickness of thermal and hydrodynamic boundary layer is equal if Prandtl number is

Options :

1. Equal to one
2. Greater than one
3. Less than one
4. Equal to Nusselt number

Question Number : 15 Question Id : 7621614215 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

According to Stefan Boltzmann law, ideal radiators emit radiant energy at a rate proportional to

Options :

1. Absolute temperature
2. Square of temperature
3. Fourth power of absolute temperature
4. Fourth power of temperature

Question Number : 16 Question Id : 7621614216 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A non-dimensional number generally associated with natural convection heat transfer is

Options :

1. Grashoff number
2. Nusselt number
3. Weber number
4. Prandtl number

Question Number : 17 Question Id : 7621614217 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The heat transfer from a hot body to a cold body is directly proportional to the surface area and difference of temperatures between the two bodies. This statement is called

Options :

1. First law of thermodynamics
2. Newton's law of cooling
3. Newton's law of heating
4. Stefan's law

Question Number : 18 Question Id : 7621614218 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Fouling factor is used

Options :

1. In heat exchanger design as a safety factor

2. In case of Newtonian fluids

3. When a liquid exchanges heat with a gas

4. In case of Non-Newtonian fluids

Question Number : 19 Question Id : 7621614219 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

According to Prevost theory of heat exchange

Options :

1. It is impossible to transfer heat from low temperature source to high temperature source

2. Heat transfer by radiation requires no medium

3. All bodies above absolute zero emit radiation

4. Heat transfer in most of the cases takes place by combination of conduction, convection and radiation

Question Number : 20 Question Id : 7621614220 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The automobile radiator is a heat exchanger of

Options :

1. Parallel flow type

2. Counter flow type

3. Cross flow type

4. Regenerator type

Question Number : 21 Question Id : 7621614221 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

According to kinetic theory of gases, the absolute zero temperature is attained when

Options :

1. Volume of the gas is zero

2. Pressure of the gas is zero

3. Kinetic energy of the molecules is zero

4. Specific heat of gas is zero

Question Number : 22 Question Id : 7621614222 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is an intensive property of a thermodynamic system?

Options :

1. Mass
2. Temperature
3. Energy
4. Volume

Question Number : 23 Question Id : 7621614223 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Work done in an adiabatic process between a given pair of end states depends on

Options :

1. The end states only
2. Particular adiabatic process
3. The value of index 'n'
4. The value of heat transferred

Question Number : 24 Question Id : 7621614224 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The fuels in order of decreasing knock tendency for spark ignition engines are

Options :

1. Paraffin, aromatic, napthene
2. Paraffin, napthene, aromatic
3. Napthene, aromatics, paraffin
4. Napthene, paraffin, aromatic

Question Number : 25 Question Id : 7621614225 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The correct sequence of the decreasing order of brake thermal efficiency of the three given basic types of engines is

Options :

1. Four stroke C.I. engine, four stroke S.I. engine, two stroke S.I. engine
2. Four stroke S.I. engine, four stroke C.I. engine, two stroke S.I. engine

3. Four stroke C.I. engine, two stroke S.I. engine, four stroke S.I. engine

4. Two stroke S.I. engine, four stroke S.I. engine, four stroke C.I. engine

Question Number : 26 Question Id : 7621614226 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In vapour compression cycle using NH3 as refrigerant, initial charge is filled at

Options :

1. Suction of compressor

2. Delivery of compressor

3. High pressure side close to receiver

4. Low pressure side near receiver

Question Number : 27 Question Id : 7621614227 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Formation of frost on evaporator in refrigerator

Options :

1. Results in loss of heat due to poor heat transfer

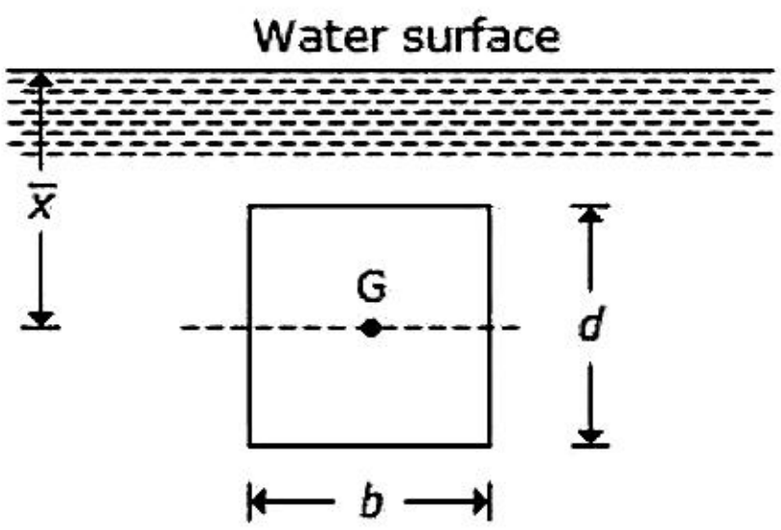
2. Increases heat transfer rate

3. Is immaterial

4. Can be avoided by proper design

Question Number : 28 Question Id : 7621614228 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A vertically immersed surface is shown in the below figure. The distance of its centre of pressure from the water surface is



Options :

1. $(b^2/12d) + \bar{x}$

2. $(d^2/12\ \bar{x}) + \bar{x}$

3. $(b^2/12\ \bar{x}) + \bar{x}$

4. $(d^2/12b) + \bar{x}$

Question Number : 29 Question Id : 7621614229 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The property of a fluid which enables it to resist tensile stress is known as

Options :

1. Compressibility

2. Surface tension

3. Cohesion

4. Adhesion

Question Number : 30 Question Id : 7621614230 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The two important forces for a floating body are

Options :

1. Buoyancy, gravity

2. Buoyancy, pressure

3. Buoyancy, inertial

4. Inertial, gravity

Question Number : 31 Question Id : 7621614231 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Meta-centric height is given as the distance between

Options :

1. The center of gravity of the body and the metacenter

2. The center of gravity of the body and the center of buoyancy

3. The center of gravity of the body and the center of pressure

4. Center of buoyancy and metacenter

Question Number : 32 Question Id : 7621614232 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A bucket of water is hanging from a spring balance. An iron piece is suspended into water without touching sides of bucket from another support. The spring balance reading will

Options :

1. Increase
2. Decrease
3. Remain same
4. Increase/decrease depending on depth of immersion

Question Number : 33 Question Id : 7621614233 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The most practical fuel for a thermonuclear reactor, both from economical and nuclear consideration is

Options :

1. Plutonium
2. Uranium
3. Deuterium
4. Thorium

Question Number : 34 Question Id : 7621614234 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Dimensions of surface tension are

Options :

1. $M\,L^{\circ}T^{-2}$
2. $M\,L^{\circ}T$
3. $M\,LT^{2}$
4. $M\,L^{2}T^{2}$

Question Number : 35 Question Id : 7621614235 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The tendency of a liquid surface to contract is due to the following property

Options :

1. Cohesion
2. Adhesion
3. Viscosity
4. Surface tension

Question Number : 36 Question Id : 7621614236 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A tank of uniform cross-sectional area (A) containing liquid upto height (H_1) has an orifice of cross-sectional area (a) at its bottom. The time required to bring the liquid level from H_1 to H_2 will be

Options :

1. $2A \times \sqrt{H_1}/(Cd \times a \times \sqrt{(2g)})$

2. $2A \times \sqrt{H_2}/(Cd \times a \times \sqrt{(2g)})$

3. $2A \times (\sqrt{H_1} - \sqrt{H_2})/(Cd \times a \times \sqrt{(2g)})$

4. $2A \times (\sqrt{H_1}/2 - \sqrt{H_2}/2)/(Cd \times a \times \sqrt{(2g)})$

Question Number : 37 Question Id : 7621614237 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In centrifugal pumps, maximum efficiency is obtained when the blades are

Options :

1. Straight

2. Bent forward

3. Bent backward

4. Radial

Question Number : 38 Question Id : 7621614238 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In reaction turbine, draft tube is used

Options :

1. To transport water downstream without eddies

2. To convert the kinetic energy to flow energy by a gradual expansion of the flow cross-section

3. For safety of turbine

4. To increase flow rate

Question Number : 39 Question Id : 7621614239 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The maximum hydraulic efficiency of an impulse turbine is (where φ = Angle of blade tip at outlet)

Options :

1. $(1 + \cos \varphi)/2$

2. $(1 - \cos \varphi)/2$

3. $(1 + \sin \varphi)/2$

4. $(1 - \sin \varphi)/2$

Question Number : 40 Question Id : 7621614240 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A pitot tube is used to measure the

Options :

1. Velocity of flow at the required point in a pipe

2. Pressure difference between two points in a pipe

3. Total pressure of liquid flowing in a pipe

4. Discharge through a pipe

Question Number : 41 Question Id : 7621614241 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a reaction turbine, when steam flows through the fixed blades,

Options :

1. Pressure increases while velocity decreases

2. Pressure decreases while velocity increases

3. Pressure and velocity both decreases

4. Pressure and velocity both increases

Question Number : 42 Question Id : 7621614242 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A throttle governed steam engine develops 15 kW with 280 kg per hour of steam and 35 kW with 520 kg per hour of steam. The steam consumption in kg per hour when developing 20 kW will be nearly

Options :

1. 340 kg/h

2. 210 kg/h

3. 280 kg/h

4. 150 kg/h

Question Number : 43 Question Id : 7621614243 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The ratio of actual mass of water vapour in a given volume of moist air to the mass of water vapour in the same volume of saturated air at the same temperature and pressure, is called

Options :

1. Humidity ratio

2. Relative humidity

3. Absolute humidity

4. Degree of saturation

Question Number : 44 Question Id : 7621614244 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Condensing temperature in a refrigerator is the temperature

Options :

1. of cooling medium

2. of freezing zone

3. of evaporator

4. at which refrigerant gas becomes liquid

Question Number : 45 Question Id : 7621614245 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a pressure enthalpy chart, the space to the left of the saturated liquid line represents

Options :

1. Wet vapour region

2. Superheated vapour region

3. Sub-cooled liquid region

4. Liquid region

Question Number : 46 Question Id : 7621614246 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The property of a material which enables it to resist fracture due to high impact loads is known as

Options :

1. Elasticity

2. Endurance

3. Strength

4. Toughness

Question Number : 47 Question Id : 7621614247 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If a load W is applied instantaneously on a bar, then the stress induced in bar will

Options :

1. be independent of ratio of mass of load W to mass of bar (y)

2. increase with increase in y

3. decrease with decrease in y

4. depend on other considerations

Question Number : 48 Question Id : 7621614248 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The size of a gear is usually specified by

Options :

1. Pressure angle
2. Pitch circle diameter
3. Circular pitch
4. Diametral pitch

Question Number : 49 Question Id : 7621614249 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In order to avoid tearing of the plate at an edge, the distance from the centre line of the rivet hole to the nearest edge of the plate should be equal to (where d = Diameter of rivet hole)

Options :

1. d
2. 1.5 d
3. 2.5 d
4. 2 d

Question Number : 50 Question Id : 7621614250 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Pick up wrong statement about friction force for dry surfaces. Friction force is

Options :

1. Proportional to normal load between the surfaces
2. Dependent on the materials of contact surface
3. Proportional to velocity of sliding
4. Independent of the area of contact surfaces

Question Number : 51 Question Id : 7621614251 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The moment of inertia of a thin rod of mass 'm' and length 'l', about an axis through its centre of gravity and perpendicular to its length is

Options :

1. $ml^2/4$
2. $ml^2/6$
3. $ml^2/8$

4. $ml^2/12$

Question Number : 52 Question Id : 7621614252 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The forces, which meet at one point and their lines of action also lie on the same plane, are known as

Options :

1. Coplanar concurrent forces

2. Coplanar non-concurrent forces

3. Non-coplanar concurrent forces

4. Non-coplanar non-concurrent forces

Question Number : 53 Question Id : 7621614253 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A flywheel on a motor goes from rest to 1000 rpm in 6 sec. The number of revolutions made is nearly equal to

Options :

1. 25

2. 50

3. 100

4. 250

Question Number : 54 Question Id : 7621614254 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The stress induced in a body, when suddenly loaded, is _____ the stress induced when the same load is applied gradually.

Options :

1. Equal to

2. One-half

3. Twice

4. Four times

Question Number : 55 Question Id : 7621614255 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The torque transmitted by a solid shaft of diameter (D) is (where τ = Maximum allowable shear stress)

Options :

1. $(\pi/4) \times \tau \times D^3$

2. $(\pi/16) \times \tau \times D^3$

3. $(\pi/32) \times \tau \times D^3$

4. $(\pi/64) \times \tau \times D^3$

Question Number : 56 Question Id : 7621614256 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Strain energy is the

Options :

1. Energy stored in a body when strained within elastic limits

2. Energy stored in a body when strained up to the breaking of a specimen

3. Maximum strain energy which can be stored in a body

4. Proof resilience per unit volume of a material

Question Number : 57 Question Id : 7621614257 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When a beam is subjected to a bending moment, the strain in a layer is _____ the distance from the neutral axis.

Options :

1. Inversely proportional to square root of

2. Directly proportional to

3. Inversely proportional to

4. Independent of

Question Number : 58 Question Id : 7621614258 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When two plates are butt together and riveted with cover plates with two rows of rivets, the joint is known as

Options :

1. Lap joint

2. Butt joint

3. Single riveted single cover butt joint

4. Double riveted double cover butt joint

Question Number : 59 Question Id : 7621614259 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the opposite links of a four bar linkage are equal, the links will always form a

Options :

1. Triangle

2. Rectangle

3. Parallelogram

4. Pentagon

Question Number : 60 Question Id : 7621614260 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The steering of a ship means

Options :

1. Movement of a complete ship up and down in vertical plane about transverse axis

2. Turning of a complete ship in a curve towards right or left, while it moves forward

3. Rolling of a complete ship sideways

4. Motion of the ships in any means

Question Number : 61 Question Id : 7621614261 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is false statement in respect of differences between machine and structure?

Options :

1. Machines transmit mechanical work, whereas structures transmit forces

2. In machines, relative motion exists between its members, whereas same does not exist in case of structures

3. Machines modify movement and work, whereas structures modify forces

4. Efficiency of machines as well as structures is below 100 %

Question Number : 62 Question Id : 7621614262 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The critical speed of a shaft with a disc supported in between is equal to the natural frequency of the system in

Options :

1. Transverse vibrations

2. Torsional vibrations

3. Longitudinal vibrations

4. Lateral vibrations

Question Number : 63 Question Id : 7621614263 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The instantaneous center of a rigid thin disc rolling on a plane rigid surface is located at

Options :

1. The center of the disc

2. The point of contact

3. An infinite distance on the plane surface

4. The point on the circumference situated vertically opposite to the contact point

Question Number : 64 Question Id : 7621614264 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Screws used for power transmission should have

Options :

1. Very fine threads
2. High efficiency
3. Low efficiency
4. Strong teeth

Question Number : 65 Question Id : 7621614265 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When the speed of belt increases,

Options :

1. The coefficient of friction between the belt and pulley decreases
2. The coefficient of friction between the belt and pulley increases
3. The power transmitted will decrease
4. The power transmitted will increase

Question Number : 66 Question Id : 7621614266 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Shear stress theory is applicable for

Options :

1. Ductile materials
2. Brittle materials
3. Elastic materials
4. Plastic materials

Question Number : 67 Question Id : 7621614267 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The function of a washer is to

Options :

1. Provide cushioning effect
2. Provide bearing area
3. Absorb shocks and vibrations
4. Provide smooth surface in place of rough surface

Question Number : 68 Question Id : 7621614268 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following pipe joints would be suitable for pipes carrying steam?

Options :

1. Flanged
2. Threaded
3. Bell and spigot
4. Expansion

Question Number : 69 Question Id : 7621614269 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The maximum diameter of the hole that can be punched from a plate of maximum shear stress 1/4th of its maximum crushing stress of punch, is equal to (where t = Thickness of the plate)

Options :

1. t
2. 2t
3. 4t
4. 8t

Question Number : 70 Question Id : 7621614270 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Euler's formula holds good only for

Options :

1. Short columns
2. Long columns
3. Both short and long columns
4. Weak columns

Question Number : 71 Question Id : 7621614271 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The point of contra flexure is a point where

Options :

1. Shear force changes sign
2. Shear force is maximum
3. Bending moment changes sign
4. Bending moment is maximum

Question Number : 72 Question Id : 7621614272 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The cam and follower is an example of

Options :

1. Sliding pair
2. Rolling pair
3. Lower pair
4. Higher

Question Number : 73 Question Id : 7621614273 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Oldham's coupling is the

Options :

1. Second inversion of double slider crank chain
2. Third inversion of double slider crank chain
3. Second inversion of single slider crank chain
4. Third inversion of slider crank chain

Question Number : 74 Question Id : 7621614274 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A rubber ball is dropped from a height of 2 m. If there is no loss of velocity after rebounding, the ball will rise to a height of

Options :

1. 1 m
2. 2 m
3. 3 m
4. 4 m

Question Number : 75 Question Id : 7621614275 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The coefficient of restitution for inelastic bodies is always

Options :

1. Zero
2. One
3. Between zero and one
4. More than one

Question Number : 76 Question Id : 7621614276 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one of the following represents a group incentive plan?

Options :

1. Halsey Premium Plan
2. Lincoln Plan
3. Rowan Plan
4. Taylor Plan

Question Number : 77 Question Id : 7621614277 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Work study is most useful

Options :

1. where production activities are involved
2. in judging the rating of machines
3. in improving industrial relations
4. in judging the output of a man and improving it

Question Number : 78 Question Id : 7621614278 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

PERT has following time estimate

Options :

1. one time estimate
2. two time estimate
3. three time estimate
4. four time estimate

Question Number : 79 Question Id : 7621614279 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The chuck preferred for quick setting and accurate centering of a job is

Options :

1. Four jaw independent chuck
2. Collect chuck
3. Three jaw universal chuck
4. Magnetic chuck

Question Number : 80 Question Id : 7621614280 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A diamond locating pin is used in jigs and fixtures because

Options :

1. it is very hard and wear resistant
2. it occupies very little space
3. it helps in assembly with tolerance on centre distance
4. it has a long life

Question Number : 81 Question Id : 7621614281 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In oblique cutting of metals, the cutting edge of the tool is

Options :

1. Perpendicular to the workpiece
2. Perpendicular to the direction of tool travel
3. Parallel to the direction of tool travel
4. Inclined at an angle less than 90° to the direction of tool travel

Question Number : 82 Question Id : 7621614282 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The connecting rods of IC engines are manufactured using the process of

Options :

1. extrusion
2. drop forging
3. rolling
4. spinning

Question Number : 83 Question Id : 7621614283 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a specification of lathe machine tool?

Options :

1. chuck size
2. swing over diameter
3. distance between centres
4. bed length

Question Number : 84 Question Id : 7621614284 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a function of flux that is added during casting of cast iron?

Options :

1. absorbs impurities

2. replenishes material loss

3. protects casting from oxidation

4. forms slag

Question Number : 85 Question Id : 7621614285 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The cutting fluid mostly used for machining steel is

Options :

1. Water

2. Soluble oil

3. Dry

4. Heavy oils

Question Number : 86 Question Id : 7621614286 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The welding process by Metal Inert-Gas (MIG) welding is

Options :

1. slower than the welding process by Tungsten Inert-Gas (TIG) welding

2. faster than the welding process by Tungsten Inert-Gas (TIG) welding

3. at same speed as the welding process by Tungsten Inert-Gas (TIG) welding

4. at unpredictable speed

Question Number : 87 Question Id : 7621614287 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The process in which the metal is caused to flow through a restricted orifice to create an extremely elongated strip of uniform and comparatively smaller cross-sectional area is called

Options :

1. Rolling

2. Extrusion

3. Drawing

4. Spinning

Question Number : 88 Question Id : 7621614288 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which alloy is used as joining medium in brazing operation?

Options :

1. Copper-zinc alloy
2. Nickel-silver alloy
3. Lead-tin alloy
4. Copper-nickel alloy

Question Number : 89 Question Id : 7621614289 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The angle on which the strength of the tool depends is

Options :

1. Rake angle
2. Cutting angle
3. Clearance angle
4. Lip angle

Question Number : 90 Question Id : 7621614290 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following operation is first performed?

Options :

1. Spot facing
2. Boring
3. Tapping
4. Drilling

Question Number : 91 Question Id : 7621614291 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In metal cutting operations, the shear angle is the angle made by the shear plane with the

Options :

1. Direction of the tool axis
2. Direction of tool travel
3. Perpendicular to the direction of the tool axis
4. Central plane of the work piece

Question Number : 92 Question Id : 7621614292 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The operation of making a cone-shaped enlargement of the end of a hole is known as

Options :

1. Counter-sinking

2. Counter-boring

3. Trepanning

4. Spot facing

Question Number : 93 Question Id : 7621614293 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following statement is wrong?

Options :

1. Diamond is the hardest tool material and can run at cutting speeds of 50 times that of high speed steel tool

2. Ceramic tools can be used at cutting speeds 40 times that of high speed steel tools

3. Cemented carbide tools can be used at cutting speeds 10 times that of high speed steel tools

4. Ceramic tools can withstand temperature up to 600°C only

Question Number : 94 Question Id : 7621614294 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The main purpose of a boring operation, as compared to drilling, is to

Options :

1. Drill a hole

2. Finish the drilled hole

3. Correct the hole

4. Enlarge the existing hole

Question Number : 95 Question Id : 7621614295 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Permeability can be defined as the property of molding sand

Options :

1. to hold sand grains together

2. to allow gases to escape easily from the mould

3. to withstand the heat of melt without showing any sign of softening

4. to distribute the sand grains uniformly

Question Number : 96 Question Id : 7621614296 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The type of tool used on milling machine and broaching machine is

Options :

1. Single point cutting tool

2. Two point cutting tool

3. Three point cutting tool

4. Multi-point cutting tool

Question Number : 97 Question Id : 7621614297 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one among the following welding processes uses non-consumable electrode?

Options :

1. Gas metal arc welding

2. Submerged arc welding

3. Gas tungsten arc welding

4. Flux coated arc welding

Question Number : 98 Question Id : 7621614298 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The common welding error that occurs due to shrinkage of weld metal, faulty clamping of parts, faulty penetration or overheating at joints is called

Options :

1. Distortion

2. Warping

3. Porous weld

4. Poor fusion

Question Number : 99 Question Id : 7621614299 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the welding defect caused due to improper control and poor removal of slag between passes called

Options :

1. Mismatch

2. Under fill

3. Crack

4. Porosity

Question Number : 100 Question Id : 7621614300 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Internal gear cutting operation can be performed by

Options :

1. Milling

2. Shaping with rack cutter

3. Shaping with pinion cutter

4. Hobbing

Question Number : 101 Question Id : 7621614301 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Trepanning is performed for

Options :

1. Finishing a drilled hole

2. Producing a large hole without drilling

3. Truing a hole for alignment

4. Enlarging a drilled hole

Question Number : 102 Question Id : 7621614302 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a gating system, the ratio 1: 2: 4 represents

Options :

1. Sprue base area: runner area: ingate area

2. Pouring basin area: ingate area: runner area

3. Sprue base area: ingate area: casting area

4. Runner area: ingate area: casting area

Question Number : 103 Question Id : 7621614303 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A right hand tool on a lathe cuts most efficiently when it travels

Options :

1. From left to right end of the lathe bed

2. From right to left end of the lathe bed

3. With the help of a compound slide

4. Across the bed

Question Number : 104 Question Id : 7621614304 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Lathe bed is made of

Options :

1. Mild steel

2. Alloy steel

3. Pig iron

4. Chilled cast iron

Question Number : 105 Question Id : 7621614305 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A better machinable metal is one which gives

Options :

1. Lower chip-tool contact area and larger shear angle

2. Higher chip-tool contact area and smaller shear angle

3. Lower chip-tool contact area and smaller shear angle

4. Higher chip-tool contact area and larger shear angle

Question Number : 106 Question Id : 7621614306 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following statement is incorrect?

Options :

1. An activity consumes time and resources whereas an event does not consume time or resources

2. The performance of a specific task is called an activity

3. An event is an instantaneous point in time at which an activity begins or ends

4. The turning of a job on lathe is an event whereas job turned is an activity

Question Number : 107 Question Id : 7621614307 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Travel charts provide

Options :

1. An idea of the flow of materials at various stages

2. A compact estimate of the handling which must be done between various work sections

3. The information for changes required in rearranging material handling equipment

4. An approximate estimate of the handling which must be done at a particular station

Question Number : 108 Question Id : 7621614308 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following organization(s) is preferred in automobile industry?

Options :

1. Functional organisation

2. Line organisation

3. Staff organisation

4. Line and staff organizations

Question Number : 109 Question Id : 7621614309 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

ABC analysis deals with

Options :

1. Analysis of process chart

2. Flow of material

3. Ordering schedule of job

4. Controlling inventory costs money

Question Number : 110 Question Id : 7621614310 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In break-even analysis, the total cost consists of

Options :

1. Fixed cost

2. Variable cost

3. Fixed cost + variable cost

4. Fixed cost + variable cost + overheads

Question Number : 111 Question Id : 7621614311 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Routing is essential in the following type of industry

Options :

1. Assembly industry

2. Process industry

3. Job order industry

4. Mass production industry

Question Number : 112 Question Id : 7621614312 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The production cost per unit can be reduced by

Options :

1. Producing more with increased inputs

2. Producing more with the same inputs

3. Eliminating idle time

4. Minimizing resource waste

Question Number : 113 Question Id : 7621614313 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For ship vessel industry the following layout is best suited

Options :

1. Process layout
2. Product layout
3. Fixed position layout
4. Plant layout

Question Number : 114 Question Id : 7621614314 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What does symbol 'V' employ in work study

Options :

1. Operation
2. Inspection
3. Delay / Temporary Storage
4. Permanent storage

Question Number : 115 Question Id : 7621614315 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Pessimistic time is

Options :

1. The maximum time which an activity might require
2. The average time required for a job
3. The most probable time considering all conditions
4. The minimum time in which an activity can possibly be accomplished

Question Number : 116 Question Id : 7621614316 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Navier-stokes equation is useful in the analysis of

Options :

1. viscous flow
2. non viscous flow
3. turbulent flow
4. transient flow

Question Number : 117 Question Id : 7621614317 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Ideally, to ensure best results, aspect ratio should be equal to

Options :

1. zero
2. one
3. two
4. three

Question Number : 118 Question Id : 7621614318 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The boundary condition which include direct boundary value is

Options :

1. Dirichlet boundary condition
2. Neumann boundary condition
3. Forced boundary condition
4. Discrete boundary condition

Question Number : 119 Question Id : 7621614319 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The aluminum alloy made by melting aluminum with 2% to 10% magnesium and 1.75% copper is called

Options :

1. Duralumin
2. Y-alloy
3. Magnalium
4. Hindalium

Question Number : 120 Question Id : 7621614320 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Eutectoid reaction occurs at

Options :

1. 600 °C
2. 723 °C
3. 1147 °C
4. 1493 °C