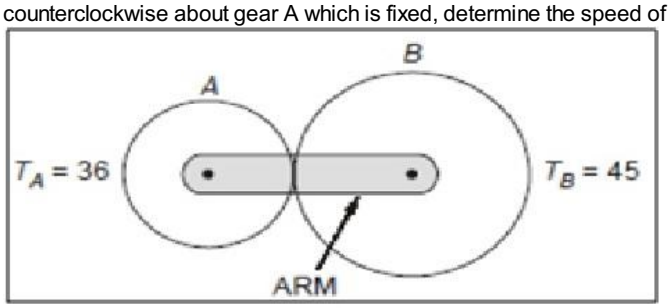
Examination: **Ph.D. Mechanical Engineering**

Section 1 - Section 1

Question No.1 4.00

Bookmark

In an epicyclic gear train, an arm carries two gears A and B having 36 and 45 teeth respectively. If the arm rotates at 150 rpm counterclockwise about gear A which is fixed, determine the speed of gear B



- 340
- 190
- 450
- 270

Question No.2 4.00

Bookmark

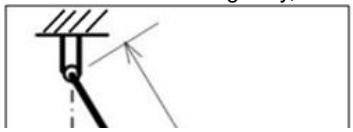
In carnot cycle P-V graph the curve from 1-2 and 3-4 define

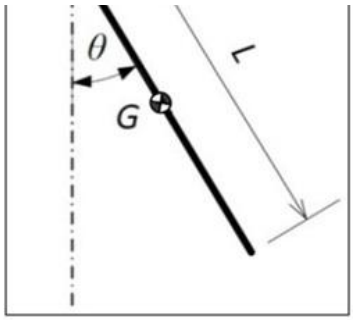
- Heat transfer is zero
- Heat transfer is constant
- Temperature is constant
- Temperature is zero

Question No.3 4.00

Bookmark

A rigid uniform rod with mass m, length L and center of gravity G is freely suspended from a hinge as shown in the figure. The rod is given a small angular displacement θ in the counter-clockwise direction from the position in which it hangs vertically (θ = 0). If g is the acceleration due to gravity, the natural frequency of oscillations (in rad/s) is





- √(3g/2L)
- √(g/L)
- √(2g/L)
- √(6g/L)

Question No.4 4.00

Bookmark

First law equation for ideal gas with constant volume

- $Q = mC_v(T_2-T_1)$
- $q = C_v(T_2-T_1)$
- Both
- None of these

Question No.5 4.00

Bookmark

Consider a fluid of viscosity μ between two circular parallel plates of radii R separated by a distance h. The upper plate is rotated at an angular velocity ω, whereas the bottom plate is held stationary. The velocity profile between the two plates is linear. The torque experienced by the bottom plate is

- $(\mu\omega\pi R^4)/2h$
- $(2\mu\omega\pi R^3)/3h$
- $(\mu\omega\pi R^3)/h$

- $(\mu\omega\pi R^3)/4h$

Question No.6 4.00

Bookmark

Find the odd one out?

- Thrive
- Renovate
- Blossom
- Flourish

Question No.7 4.00

Bookmark

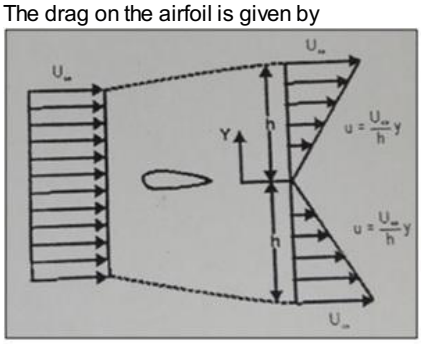
A fin will be necessary and effective only when (k = thermal conductivity of fin material, h = convective heat transfer coefficient between the fin surface and environment temperature)

- k is large and h is small
- k is large and h is also large
- k is small and h is also small
- k is small and h is large

Question No.8 4.00

Bookmark

For the control volume shown in the figure below, the velocities are measured both at the upstream and downstream ends. The fluid has density ρ, flow is incompressible, two dimensional and steady. The pressure is P0 over the entire surface of the control volume. The drag on the airfoil is given by



- $\frac{\rho u_\infty^2 h}{6}$
- $2\rho u_\infty^2 h$
- $\frac{\rho u_\infty^2 h}{3}$
- Zero

Question No.9 4.00

Bookmark

Cast non-ferrous tools typically contain

- 25% Co – 35% Cr – 50% W
- 40% Co – 15% Cr – 20% W
- 40% Co – 35% Cr – 20% W
- 30% Co – 25% Cr – 20% W

Question No.10 4.00

Bookmark

If the temperature of saturated water is increased infinitesimally at constant entropy, the resulting state of water will be

- Solid
- Liquid-vapour coexistence
- Saturated vapour
- Liquid

Question No.11 4.00

Bookmark

P = Pa + Pv is equation for model

- None of the above
- Darcys model
- Amagat model
- Dalton model

Question No.12 4.00

Bookmark

Total punch force is summation of

- Friction
- Ideal deformation
- Ironing
- All of these

Question No.13 4.00

Bookmark

Find the odd one out?

- Silkworm: Serculture
- Birds : Horticulture
- Bees : Apiculture
- Fish : Pisiculture

Question No.14 4.00

Bookmark

We must always try to adapt ourselves _____ our circumstances.

- by
- with
- to
- in

Question No.15 4.00

Bookmark

Better smooth surfaces in tube drawing are obtained by

- Hot drawing
- Deep drawing
- Cold drawing
- None of these

Question No.16 4.00

Bookmark

Match the invariant reactions in Column I with the names in Column II (L is liquid phase, and α, β, γ are solid phases). All reactions proceed to the right on cooling.

Column I	Column II
(P) $L \rightleftarrows \alpha + \beta$	(1) Monotectic
(Q) $L + \alpha \rightleftarrows \beta$	(2) Peritectoid
(R) $\gamma \rightleftarrows \alpha + \beta$	(3) Peritectic
(S) $\alpha + \beta \rightleftarrows \gamma$	(4) Eutectoid
	(5) Eutectic

- P-5, Q-3, R-4, S-2
- P-5, Q-1, R-2, S-4
- P-2, Q-1, R-4, S-5
- P-5, Q-1, R-4, S-3

Question No.17 4.00

Bookmark

In a Cartesian two-dimensional coordinate system, u and v represent the velocities in x and y directions, respectively. For a certain flow, the velocity field is represented by the following expression:

where, the coefficients a,b,c and d are constants. For an incompressible flow, which one of the following relations is TRUE?

$$\vec{V} = (ax + by)\hat{\imath} + (cx + dy)\hat{\jmath}$$

- a+c=0
- a+d=0
- b+d=0
- b+c=0

Question No.18 4.00

Bookmark

Water drains out into atmosphere from a small orifice located at the bottom of a large open tank. If the initial height of the water column is H, the time taken to empty the tank is proportional to

- $\sqrt{H}$
- H^2
- H
- $\sqrt{H^2}$

Question No.19 4.00

Question No.19 4.00

Bookmark

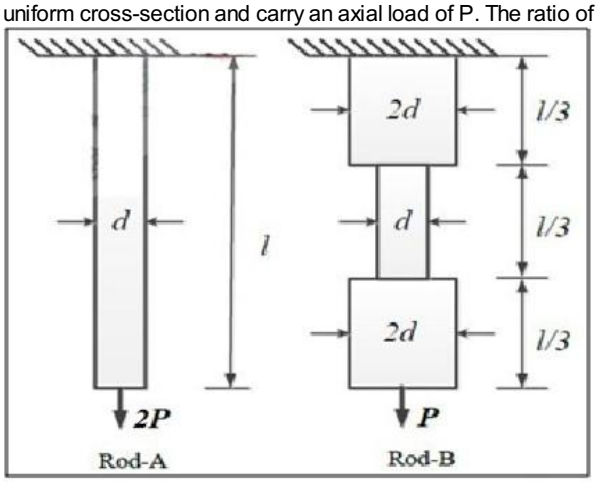
While deriving an expression for loss of head due to sudden expansion in a pipe, in addition to the continuity and impulse-momentum equations, one of the following assumptions is made

- The mean pressure in eddying fluid is equal to the upstream pressure
- The mean pressure in eddying fluid is equal to the downstream pressure
- Head lost due to eddies is neglected
- Head loss due to friction is equal to the head loss in eddying motion

Question No.20 4.00

Bookmark

Two circular rods shown in the figure. The Rod-A has uniform cross-section and carry an axial load of 2P. The Rod-B has non-uniform cross-section and carry an axial load of P. The ratio of elongation of rod-A to rod-B is given by?



- 1:02
- 4:01
- 3:01
- 2:01

Question No.21 4.00

Bookmark

At atmospheric pressure for water

- Dry bulb temperature and adiabatic saturation temperature is varies
- Dry bulb temperature and adiabatic saturation temperature is same
- Wet bulb temperature and adiabatic saturation temperature is same
- Wet bulb temperature and adiabatic saturation temperature is varies

Question No.22 4.00

Bookmark

Find tool life of HSS casting tool at speed of 20m/min. Given tool life is 121min and tool life equation is $VT^{0.5} = C1$ at 40m/min speed.

- 454
- 475
- 484
- 494

Question No.23 4.00

Bookmark

The printer's ink is an example of

- Newtonian Fluid
- Elastic Solid
- Thyxotropic Substances
- Non-Newtonian Fluid

Question No.24 4.00

Bookmark

Study the following information carefully and answer the question below it:

P, Q, R, S T went on a picnic. P is son of Q but Q is not the father of P. R is the son of S, who is the brother of P. T is the wife of S.

How is P related to S?

- Brother
- Father
- Nephew
- None of these

Question No.25 4.00

Bookmark

Statement: Warning: Cigarette smoking is injurious to Health
Assumptions:

I. Non-Smoking Promotes Health
II. This warning is not necessary

- If only assumption I is implicit
- If only assumption II is implicit
- If both I and II are implicit
- If neither I nor II is implicit

Question No.26 4.00

Bookmark

Match List-I (Methods) with List-II (Applications) and select the correct answer using the codes given below the lists:

List-I	List-II
A. Break even analysis	1. To provide different facility at different locations
B. Transportation Problem	2. To take action from among the paths with uncertainty
C. Assignment Problem	3. To choose between different methods of manufacture
D. Decision Tree	4. To determine the location of the additional plant

- A-4, B-3, C-1, D-2
- A-4, B-3, C-2, D-1
- A-3, B-4, C-1, D-2
- A-3, B-4, C-2, D-1

Question No.27 4.00

Bookmark

In a screw jack the effort (P) required to lift the load (W) is given by the relation a, angle of repose and f, angle of friction

- P =W tan (a^2 - f)
- P =W tan (a + f)
- P =W tan (a2 + f)
- P =W tan (a - f)

Question No.28 4.00

Bookmark

A steel bar (E = 200 GPa) 250 mm long and diameter 5 mm is subjected to a tensile load. The spring rate is

- 20.8 MN/m
- 38.2 MN/m
- 22.4 MN/m
- 15.7 MN/m

Question No.29 4.00

Bookmark

Effectiveness of counter flow heat exchanger is given by

$$\epsilon = \frac{1 - e^{-NTU\left(1-\frac{C_{min}}{C_{max}}\right)}}{1 - \frac{C_{min}}{C_{max}} e^{-NTU\left(1-\frac{C_{min}}{C_{max}}\right)}}$$

If same liquid at the same flow rate is used as heating and cooling media through a counter flow

double tube heat exchanger then effectiveness is given by

- $\frac{NTU - 1}{NTU}$
- $\frac{NTU - 1}{NTU + 2}$
- $\frac{NTU}{NTU + 1}$
- $\frac{NTU - 1}{NTU + 1}$

Question No.30 4.00

Bookmark

Cupping is defect in

- Tubes drawing
- Rod and wire drawing
- Rolling
- Deep drawing

Question No.31 4.00

Bookmark

Method of cooling utilized in car engines is

- Dry cooling
- Wet cooling
- Steam cooling
- None of these

Question No.32 4.00

Bookmark

A turn table is rotating at the rate of 30 rpm. A small block of mass 'm' is kept on this table at a radius 'r'. Given the friction coefficient as 0.1 the minimum radius (in m) for the mass to just overcome the frictional resistance is given by? Assume acceleration due to gravity = 10 m/s^2

- 0.2
- 0.15
- 0.05
- 0.1

Question No.33 4.00

Bookmark

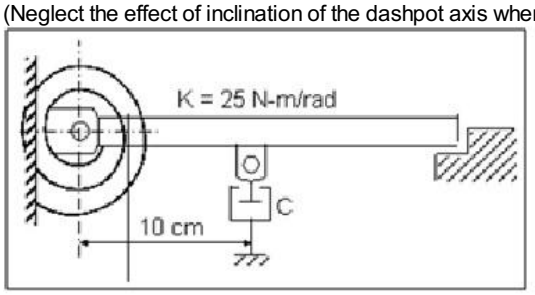
If a point moves along a straight line which is rotating, then the tangential component of acceleration is (where V is sliding velocity of point, α is angular acceleration of line, ω is angular velocity of line, r is distance of the point from fixed point on straight line)

- 2ωV + rα
- rα
- dV/dt
- (dV/dt) - rα

Question No.34 4.00

Bookmark

A heavy door along with a door closing system as shown in the figure. The moment of inertia of the door panel about the hinge axis is 16 kg-m2 and the stiffness of the torsion spring is 25 Nm/rad. The most suitable value of the damping coefficient (Ns/m) is (Neglect the effect of inclination of the dashpot axis when the door is open)



- 400
- 4000
- 40
- 4

Question No.35 4.00

Bookmark

Air conditioning for people defines comfort zone as

- Temperature between 22 – 28 and Relative humidity 40 and 50%
- Temperature between 23 – 26 and Relative humidity 45 and 60%
- Temperature between 22 – 27 and Relative humidity 40 and 60%
- Temperature between 20 – 25 and Relative humidity 20 and 70%

Question No.36 4.00

Bookmark

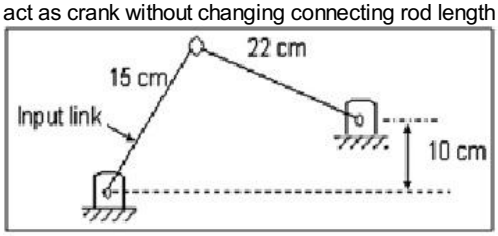
Determine maximum possible reduction for cold-rolling a 300mm thick slab when μ=0. 8 and roll diameter = 800mm. What is maximum reduction for hot rolling when μ=0.6?

- 256mm and 244mm
- 156mm and 244mm
- 256mm and 144mm
- 156mm and 144mm

Question No.37 4.00

Bookmark

In the mechanism shown in the figure can input link act as a crank? If not suggest the maximum possible length (cm) of input link to act as crank without changing connecting rod length and offset.



- No, 20 cm
- Yes
- No, 12 cm
- No, 15

- No, 15 cm

Question No.38 4.00

Bookmark

Statement: The Company has recently announced a series of incentives to the employees who are punctual and sincere.
Assumptions:
I.Those who are punctual will get motivated.
II. The Productivity of the company may increase.

- If only assumption I is implicit
- If only assumption II is implicit
- If both I and II are implicit
- If neither I nor II is implicit

Question No.39 4.00

Bookmark

Choose the best antonym of the italicized word.
There has always been a feeling of *rancour* between the two families.

- friendliness
- suspicion
- competition
- rivalry

Question No.40 4.00

Bookmark

We're late again for the test, _____?

- aren't we?
- isn't it?
- is it?
- are we?

Question No.41 4.00

Bookmark

By which of the following the resistance to fatigue of a material is measured

- Ultimate tensile strength
- Endurance Limit
- Elastic Limit
- Young's Modulus

Question No.42 4.00

Bookmark

A 25 mm radius and 300 mm long shaft is supported at the ends by two journal bearings. A load of 2 kN acts on the shaft at a distance of 200 mm from the left bearing. The length to diameter ratio for the bearings is 1.5. The maximum bearings pressure induced is

- 0.35 MPa
- 0.53 MPa
- 5.3 MPa
- 3.5 MPa

Question No.43 4.00

Bookmark

.....has a non-linear stress-strain curve

- Rubber
- Low Carbon Steel
- Copper
- Aluminium

Question No.44 4.00

Bookmark

Efficiency of Bratyon cycle is

- $\eta = 1- (T_2/T_1) ((T_4/T_3) – 1)/ ((T_2/T_3) – 1))$
- $\eta = 1- (T_1/T_2) ((T_3/T_2) – 1)/ ((T_4/T_2) – 1))$
- $\eta = 1- (T_1/T_2) ((T_4/T_1) – 1)/((T_3/T_2) – 1))$
- $\eta = 1- (T_2/T_1) ((T_2/T_3) – 1)/ ((T_4/T_2) – 1))$

Question No.45 4.00

Bookmark

Calculate permeability number of sand if it takes 2min 55s to pass 3000cm^3 of air at pressure of 10g/cm^2 through standard sample kept at height of 10cm and cross-section of sample is 10cm^2

- 158.09
- 154.36
- 157.06
- 155.25

Question No.46 4.00

Bookmark

Co-efficient of performance of Carnot refrigeration is

- $COP = T_H/T_H-T_L$
- $COP = Q_L/Wnet$
- $COP = Q_H/Wnet$
- $COP = T_H-T_L/T_H$

Question No.47 4.00

Bookmark

What is expression for 1st law of thermodynamics?

- $\Delta Q= W+U$
- $\Delta U= W+Q$
- $\Delta W= Q+U$
- $\Delta U= W (Q=0)$

Question No.48 4.00

Bookmark

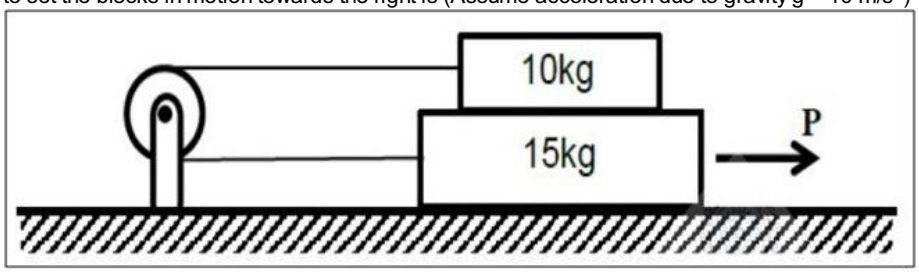
Compression-ignition engine is used to model

- Bratyon cycle
- Otto cycle
- Rankine cycle
- Diesel cycle

Question No.49 4.00

Bookmark ☐

Two rigid blocks of masses 10 kg and 15 kg are arranged one on top of the other and placed on a horizontal rough surface as shown. The blocks are connected to each other through an inextensible cable passing over a frictionless pulley. The coefficients of static friction between the blocks and also between the bottom block and the surface are all equal to 0.3. The force P (in N) needed to set the blocks in motion towards the right is (Assume acceleration due to gravity g = 10 m/s^2)



- 135
- 105
- 45
- 75

Question No.50 4.00

Bookmark ☐

The geometric tolerance that does not need a datum for its specification is

- Perpendicularity
- Runout
- Flatness
- Concentricity

Question No.51 4.00

Bookmark ☐

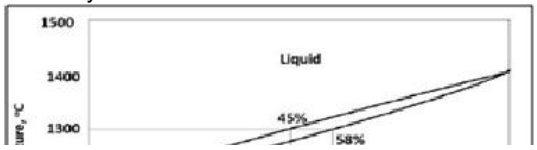
A domestic food freezer maintains temperature of -19^{o}C. The ambient air temperature is 40^{o}C. If heat leaks into the freezer at the continuous rate of 1.95kJ/s what is least power necessary to pump this heat out continuously?

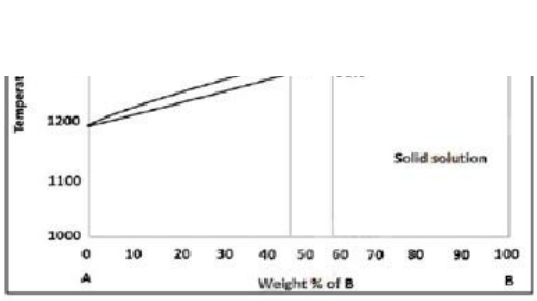
- 0.55kW
- 0.65kW
- 0.31J/s
- 0.55J/s

Question No.52 4.00

Bookmark ☐

If the alloy contains 47 wt% of A and 53 wt% of B at 1300^{o}C, the wt% of liquid present in the alloy at this temperature will be:





- (500/13) %
- 45%
- (800/13) %
- (200/13) %

Question No.53 4.00

Bookmark

Choose the synonym of the italicized word. Many cities were *incinerated* during the war.

- destroyed
- burnt
- attacked
- bombed

Question No.54 4.00

Bookmark

Solar energy is transferred as heat to fluid within a heat engine and the engine would reject energy as heat to the atmosphere. Experiments indicate that about 1780kJ/m^2 of energy can be collected when the plate is operating at 80^oC. Estimate the minimum collector area that would be required for a plant producing 1kW of useful shaft power. The atmospheric temperature may be assumed to be 30^oC.

- 11.5m^2
- 15.34m^2
- 14.34m^2
- 15m^2

Question No.55 4.00

Bookmark

Which of the following gases are used in Tungsten Inert Gas Welding

- Carbondioxide and Hydrogen
- Helium and Neon
- Argon and Helium
- Hydrogen and Oxygen

Question No.56 4.00

Bookmark

What is dedendum circle diameter equal to

- Length of arc of contact × Cosf
- Pitch circle diameter × Cosf

- Pitch circle diameter × Cosf
- Base circle diameter × Cosf
- Addendum circle diameter × Cosf

Question No.57 4.00

Bookmark

Select the Pair that best respresents the relationship that is given in the question:
Slapstick:Laughter

- Mimicry:Laughter
- Satire: Sarcasm
- Horror:Fear
- Clown: Comical

Question No.58 4.00

Bookmark

In sleeve and cotter joint, the length of cotter is taken as

- 2 d
- 4.5 d
- 4 d
- 3 d

Question No.59 4.00

Bookmark

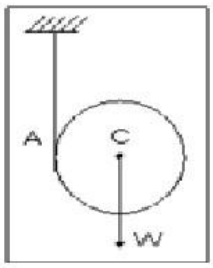
A cylinder fitted with a frictionless piston contains 2.00 mol of He gas at P=1.00 atm and is in a large constant-temperature bath at 500 K. The pressure is reversibly increased to 3.00 atm. Find w, q, and U for this process

- -9.133×10^3 Joule, 9.133×10^3Joule, 10
- 9.133×10^3Joule, -9.133×10^3 Joule, 0
- -7.133×10^3Joule, 7.133×10^3Joule, 10
- 7.133×10^3Joule, -7.133×10^3Joule, 0

Question No.60 4.00

Bookmark

A right circular cylinder of radius r and weight W is suspended by a cord that is wound around its surface. If the cylinder is allowed to fall, find the tension (T) in the cord

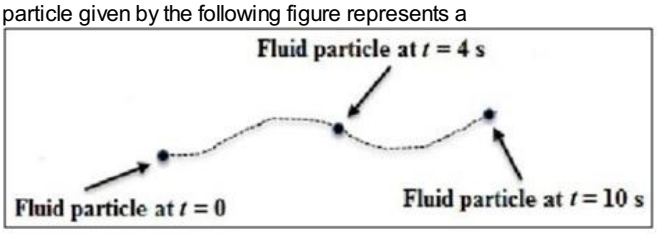


- W/3
- W/2
- W
- 2W/3

Question No.61 4.00

Bookmark

During an experiment, the position of a fluid particle is monitored by an instrument over a time period of 10 s. The trace of the particle given by the following figure represents a



- Pathline
- Streakline
- Streamline
- Timeline

Question No.62 4.00

Bookmark

One Joule (J) is equal to

- 1 Nm
- 10 kNm/s
- 10 Nm/s
- 1 kNm

Question No.63 4.00

Bookmark

The drive shaft in an automobile delivers 250 Nm of torque as it rotates at 3000 rpm. Calculate the Power.

- 78.539kW
- 58.847kW
- 88.847kW
- 75.587kW

Question No.64 4.00

Bookmark

The power of a porter governor is

- Proportional to square of the speed
- Inversely proportional to speed
- Independent of speed
- Inversely proportional to square of the speed

Question No.65 4.00

Bookmark

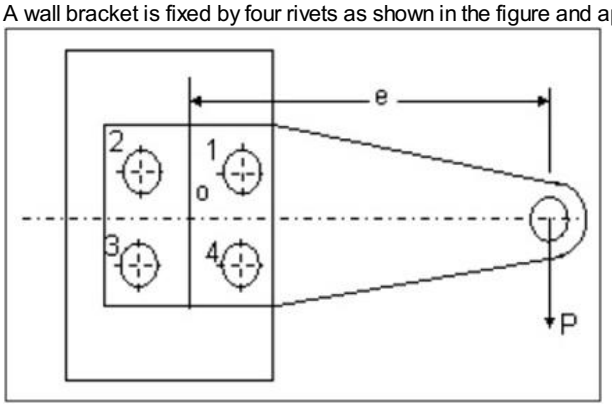
This pup is very naughty. It is always _____some mischief or the other.

- in for
- up at
- out for
- up to

Question No.66 4.00

Bookmark

A wall bracket is fixed by four rivets as shown in the figure and applied a load of P. The stresses in the rivets are

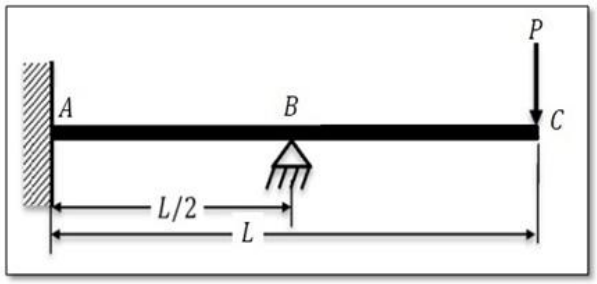


- Primary shear and torsional shear stresses
- Primary and secondary transverse shear stresses
- Tensile and shear stresses
- Bending and shear stresses

Question No.67 4.00

Bookmark

A beam ABC is subjected to load P at its free end C as shown in the figure. The flexural rigidity of the beam is EI. The vertical support reaction at point B is



- 5P/2
- 5P/4
- 4P/5
- 2P/5

Question No.68 4.00

Bookmark

If Road is coded as WTFI, what is the code for BEAT

- DEFG
- HIGZ
- ABCD
- GJFY

Question No.69 4.00

Bookmark

Thermal efficiency of Otto Cycle

- $\eta = 1 + (1 / r^{k-1})$
- $\eta = 1 - (1 / r^{k+1})$
- $\eta = 1 + (1 / r^{k+1})$
- $\eta = 1 - (1 / r^{k-1})$

Question No.70 4.00

Bookmark ☐

Inclined tube manometer is useful for the measurement of ……..pressure

- High
- Small
- Medium
- Negative

Question No.71 4.00

Bookmark ☐

When the bus was at full speed, its brakes failed and an accident was _____

- infallible
- inevitable
- essential
- undeniable

Question No.72 4.00

Bookmark ☐

People in the age group of 40 to 50 years are more likely to purchase ice cream and are more likely to purchase it in large amounts than are members of any other age group. The general perception that teenagers eat more ice cream than adults must, therefore, be incorrect.

The argument is flawed primarily because the author

- does not specify the precise amount of ice cream purchased by any demographic group
- depends on popular belief rather than on documented research findings
- discusses ice cream rather than more nutritious and healthful foods
- fails to distinguish between purchasing and consuming

Question No.73 4.00

Bookmark ☐

An automobile radiator is …… type of heat exchanger

- Regenerator
- Counter Flow
- Parallel Flow
- Cross Flow

Question No.74 4.00

Bookmark ☐

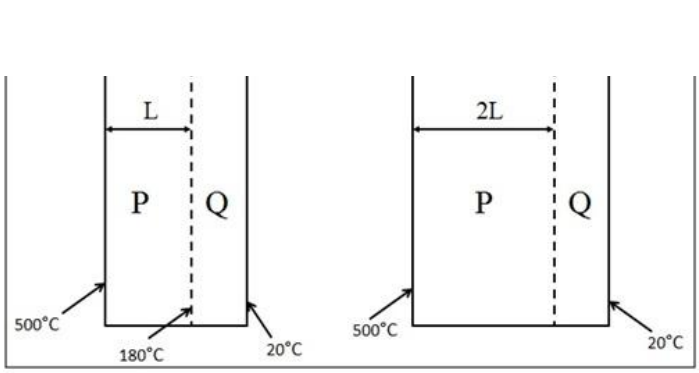
Exhausted: Tired

- Depressed : Sad
- Considerate: Rude
- Progressive: Regressive
- Arrogant: Docile

Question No.75 4.00

Bookmark ☐

For the composite wall shown in the figure, the steady state interface temperature in case (1) is 180^{o}C. If the thickness of layer P is doubled in case (2), then the rate of heat transfer (assuming 1-D conduction) is reduced by



- 60%
- 40%
- 70%
- 50%

Question No.76 4.00

Bookmark

In lost wax casting, tolerance is of the order of

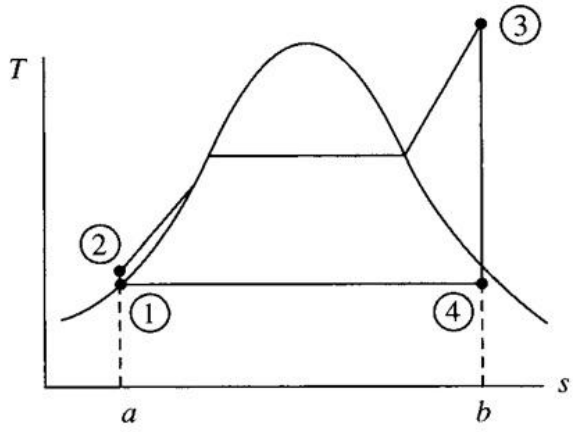
- ±0.005 mm
- ±2 mm
- ±0.5 mm

- ±0.2 mm

Question No.77 4.00

Bookmark

In rankine cycle T-S diagram 4-1 defines



- Turbine
- Condenser
- Boiler
- Pump

Question No.78 4.00

Bookmark

Choose the correct expression?

- Atmospheric pressure = Absolute pressure + Gauge pressure
- Absolute pressure = Gauge pressure – Atmospheric pressure
- Gauge pressure = Absolute pressure + Atmospheric pressure
- Absolute pressure = Gauge pressure + Atmospheric pressure

Question No.79 4.00

Bookmark

If the thermal conductivity of a material of wall varies as $K_0 (1+\alpha T)$ then the temperature at the centre of the wall as compared to that in case of constant thermal conductivity will be

- More
- Less
- Same
- All the above are possible

Question No.80 4.00

Bookmark

A man makes 150 pots per minute. If 30 pots are packed in a case how many cases will be made ready by the Man in one hour?

- 1000
- 200
- 250
- 300

Question No.81 4.00

Bookmark

…….spring is used to absorb shocks and vibrations

- Leaf
- Closely coiled helical
- Torsion
- Open coiled helical

Question No.82 4.00

Bookmark

Numerical controlled can be applied to

- Drilling and Boring Machines
- All of the above
- Grinding and Sawing Machines
- Milling Machines

Question No.83 4.00

Bookmark

Correct the error in the italicized part of the sentence by choosing the most appropriate option.
Leaving aside little room for misinterpretation, the senior politician offered clarifications about his role in the party elections.

- Having left less room for
- Leaving less room for
- Leaving for little room to
- Leaving little room for

Question No.84 4.00

Bookmark

When piston is at top dead centre, volume occupied by the air in cylinder is

- Constant volume
- Isotropic volume
- Clearance volume
- Isobar volume

Question No.85 4.00

Bookmark

Which of the following is used as a lubricant in a rope brake dynamometer

- Grease
- No lubricant is used
- Oil
- Water

Question No.86 4.00

Bookmark

Which of the following are measured by a " Sine Bar"

- External Tapers
- Gear Profiles
- Surface Roughness
- Internal Tapers

Question No.87 4.00

Bookmark

Study the following information carefully and answer the question below it

The Director of an MBA college has decided that six guest lectures on the topics of Motivation, Decision Making, Quality Circle, Assessment Centre, Leadership and Group Discussion are to be organised on each day from Monday to Sunday.
(i) One day there will be no lecture (Saturday is not that day), just before that day Group Discussion will be organised.
(ii) Motivation should be organised immediately after Assessment Centre.
(iii) Quality Circle should be organised on Wednesday and should not be followed by Group Discussion
(iv) Decision Making should be organised on Friday and there should be a gap of two days between Leadership and Group

Discussion

On which day the lecture on Leadership will be organised?

- Monday
- Saturday
- Thursday
- Tuesday

Question No.88 4.00

Bookmark

Which one of the following is the characteristic of a screw dislocation?

- Atomic displacement due to the movement of the dislocation is in the direction of the motion of the dislocation line.
- Direction of motion of dislocation is parallel to the Burgers vector.
- Dislocation line and Burgers vector are parallel.
- It has a unique slip plane.

Question No.89 4.00

Bookmark

Reversible engine is also called as

- Combustion engine
- Diesel engine
- Carnot engine
- None of these

Question No.90 4.00

Bookmark

I don't care if she comes to my house or not.
The underlined word is a

- pronoun
- verb
- conjunction
- gerund

Question No.91 4.00

Bookmark

A turbine is supplied with steam at gauge pressure of 1.8MPa. After expansion in the turbine the steam flows into a condenser which is maintained at a vacuum of 510mm Hg. The barometric pressure is 572mm Hg. Express inlet and exhaust steam pressures in Pascals. Take density of mercury as 13.6×10^3 kg/m^3

- 2.3MPa and 27kPa
- 1MPa and 17kPa
- 2.503MPa and 15.27kPa
- 1.803MPa and 8.004kPa

Question No.92 4.00

Bookmark

……..activities are the activities for which total float is equal to zero

- Dummy
- Sub critical
- Supercritical
- Critical

Question No.93 4.00

Bookmark

The ratio of brake power to indicated power of an IC engine is called

- Thermal Efficiency
- Mechanical Efficiency
- Volumetric Efficiency
- Relative Efficiency

Question No.94 4.00

Bookmark

With which of the following, is the phenomenon of "Weld Decay" is associated

With which of the following , is the phenomenon of 'Weld Decay' is associated

- Manganese Alloys
- Brass
- Stainless Steels
- Aluminium Alloys

Question No.95 4.00

Bookmark

The heating and expanding of a gas is called

- Thermodynamic Cycle
- Thermodynamic Law
- Thermodynamic Process
- Thermodynamic System

Question No.96 4.00

Bookmark

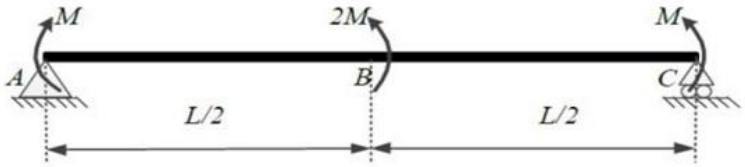
Drawing with little change in wall thickness

- Sinking
- Ironing
- Stretch forming
- Deep drawing

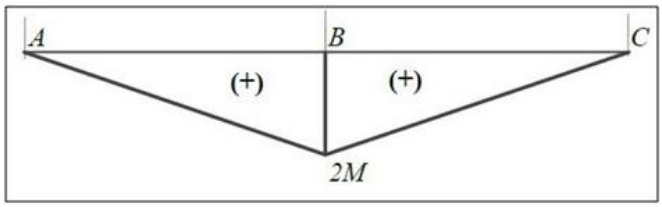
Question No.97 4.00

Bookmark

The simply supported beam shown below is subjected to a clockwise moment M at point A and two counterclockwise moments 2M and M at points B and C, respectively. Which one of the following is the correct bending moment diagram (tensile at bottom is positive moment) for the beam?



c



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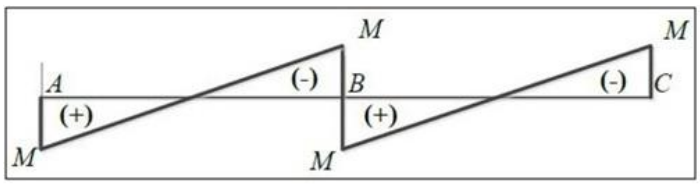
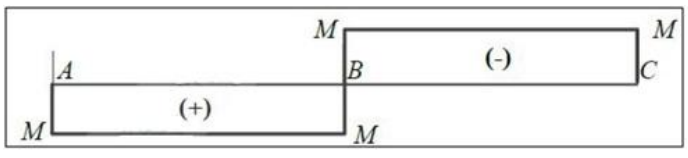
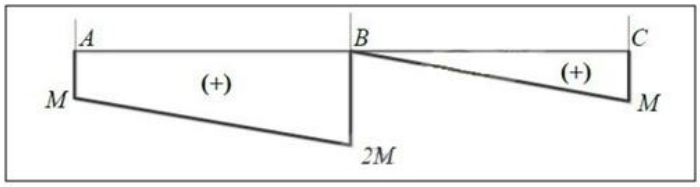

M
M
A
(-)
B
(-)
C
(+)
(+)
M
M

○


M
M
A
B
(-)
C
(+)
M
M

C



Question No.98 4.00

Bookmark

Thermal conductivity of solid metals …….. with rise in temperature

- Decreases
- Remains same
- Increases
- First increases to maximum values and then decreases to zero

Question No.99 4.00

Bookmark

In case of a string, the tension is maximum

- At left support
- At Midway
- At right support
- At Quarter span

Question No.100 4.00

Bookmark

In the following question, the first two words (given in italics) have a definite relationship. Choose one word out of the given four alternatives which will fill the blank space and showthe same relationship with the third word as between the first two.

Hear is to *Deafas* as *Speak* is to ……?…….

- Dumb
- Silent
- Talkative
- Listen