



(Papers) SSC Junior Engineer Exam Paper - 2016 "held on 02 March 2017 "Morning Shift(General Engineering)

QID : 801 - A football was inflated to a gauge pressure of 1 bar when the ambient temperature was 15°C. When the game started next day, the air temperature at the stadium was 5°C. Assume that the volume of the football remains constant at 2500 cm³. Gauge pressure of air to which the ball must have been originally inflated so that it would equal 1 bar gauge at the stadium is ____.

Options:

- 1) 2.23 bar
- 2) 1.94 bar
- 3) 1.07 bar
- 4) 1 bar

Correct Answer: 1.07 bar

QID : 802 - The engine oil at 150 °C is cooled to 80 °C in a parallel flow heat exchanger by water entering at 25 °C and leaving at 60 °C. The exchanger effectiveness will be ____.

Options:

- 1) 0.36
- 2) 0.46
- 3) 0.56
- 4) 0.66

Correct Answer: 0.56

QID : 803 - The atomic packing factor is the highest in which of the following cubic lattice system?

Options:

- 1) Simple Cubic
- 2) Body Centered Cubic (BCC)
- 3) Face Centered Cubic (FCC)
- 4) Diamond Cubic

Correct Answer: Face Centered Cubic (FCC)

QID : 804 - The valves mounted on the boilers which change the direction of flow of steam by 90° and valves fitted in the pipelines which allow the steam in the same direction are respectively called as ____.

Options:

- 1) Stop valves and junction valves
- 2) Junction valves and stop valves
- 3) Junction valves and safety valves
- 4) Feed safety valves and stop valves

Correct Answer: Junction valves and stop valves

QID : 805 - Which of the following are boiler mountings and not boiler accessories ?

- A] Pressure gauge
- B] Air preheater
- C] Superheater

Options:

- 1) B and C only
- 2) A only
- 3) A, B and C
- 4) A and C only

Correct Answer: A only

QID : 806 - Entropy is a measure of _____.

Options:

- 1) Reversible heat transfer
- 2) System efficiency
- 3) Degree of randomness
- 4) System temperature

Correct Answer: Degree of randomness

QID : 807 - Gibbs free energy is considered at which one of the following condition?

Options:

- 1) Isothermal, isochoric
- 2) Isobaric, isochoric
- 3) Isothermal, isobaric
- 4) None of these

Correct Answer: Isothermal, isobaric

QID : 808 - In vapour absorption refrigeration systems, which of the following fluids are commonly used?

Options:

- 1) air and water
- 2) sulphur dioxide and water
- 3) ammonia and water
- 4) freon and water

Correct Answer: ammonia and water

QID : 809 - In a cross compound steam engine _____.

Options:

- 1) one high and one low pressure cylinder are set side by side, driving the same shaft, cranks being set 90° apart
- 2) two cylinders are centred on the same piston rod, the 1.p. cylinder being placed nearest the crankshaft
- 3) two cylinders are set at 90° , usually to save floor space
- 4) None of these

Correct Answer: two cylinders are centred on the same piston rod, the 1.p. cylinder being placed nearest the crankshaft

QID : 810 - Which of the following is expected to have highest thermal conductivity?

Options:

- 1) steam
- 2) solid ice
- 3) melting ice
- 4) water

Correct Answer: solid ice

QID : 811 - A reversible thermodynamic cycle containing only three processes and producing work is to be constructed. The constraints are

- A. there must be one isothermal process
- B. there must be one isentropic process
- C. maximum and minimum cycle pressures and the clearance volume are fixed, and
- D. polytropic processes are not followed Then, the number of possible cycles is

Options:

- 1) 1
- 2) 2

3) 3

4) 4

Correct Answer: 1

QID : 812 - Which combination of the following statements is correct?

The incorporation of re-heater in a steam power plant

- A. Always increases the thermal efficiency of the plant
- B. Always increases the dryness fraction of steam at condenser inlet
- C. Always increases the main temperature of heat addition
- D. Always increases the specific work output

Options:

- 1) A and D only
- 2) B and D only
- 3) A, C and D only
- 4) A, B, C and D

Correct Answer: A, B, C and D

QID : 813 - The amount of heat required to raise the temperature of 1 kg of water from 0°C to the saturation temperature T_s °C at a given constant pressure is defined as _____.

Options:

- 1) Superheat
- 2) Entropy
- 3) Latent heat
- 4) Sensible heat

Correct Answer: Sensible heat

QID : 814 - The enthalpy of steam is defined as _____.

Options:

- 1) Difference of internal energy and product of pressure and volume.
- 2) Product of internal energy and pressure.
- 3) Sum of internal energy and product of pressure and volume.
- 4) Amount of heat change divided by the absolute temperature.

Correct Answer: Sum of internal energy and product of pressure and volume.

QID : 815 - What are the advantages of water tube boilers over fire tube boilers?

- A. Steam at higher pressures can be produced.
- B. More effective heat transfer.
- C. Sediment deposition is more.

Options:

- 1) A only
- 2) A and C only
- 3) A, B and C
- 4) A and B only

Correct Answer: A and B only

QID : 816 - What is the state, in which none of the properties of the system change with time, known as?

Options:

- 1) Unsteady state
- 2) Steady state
- 3) Dynamic
- 4) Quasistatic

Correct Answer: Steady state

QID : 817 - The rate of heat transfer across any plane normal to the x-direction is proportional to the wall area and the temperature gradient in the x-direction. This statement is also referred to as _____.

Options:

- 1) Second Law of Thermodynamics
- 2) Kelvin's Law
- 3) Third Law of Thermodynamics
- 4) Fourier's Law

Correct Answer: Fourier's Law

QID : 818 - The critical temperature of a pure substance is defined as _____

Options:

- 1) The minimum temperature at which solid and liquid phases can coexist in equilibrium.

- 2) The maximum temperature at which solid and liquid phases can coexist in equilibrium.
- 3) The minimum temperature at which vapour and liquid phases can coexist in equilibrium.
- 4) The maximum temperature at which vapour and liquid phases can coexist in equilibrium.

Correct Answer: The maximum temperature at which vapour and liquid phases can coexist in equilibrium.

QID : 819 - Which of the following is the correct expression for the maximum thermal efficiency (η) of a system undergoing a reversible power cycle while operating between thermal reservoirs at temperatures T_c and T_h

Options:

- 1) $\eta = T_c/T_h$
- 2) $\eta = T_h/T_c - 1$
- 3) $\eta = 1 - T_c/T_h$
- 4) $\eta = 1$

Correct Answer: $\eta = 1 - T_c/T_h$

QID : 820 - In actual refrigeration systems, the compressor handles vapour only. What is this process commonly referred to as ____.

Options:

- 1) Gas compression
- 2) Phase compression
- 3) Dry compression
- 4) Wet compression

Correct Answer: Dry compression

QID : 821 - Property of a fluid at zero temperature is referred to as ____.

Options:

- 1) Stagnation property
- 2) Standard property
- 3) Simple property
- 4) None of these

Correct Answer: Stagnation property

QID : 822 - The increase in pressure ____.

Options:

- 1) lowers the boiling point of a liquid
- 2) raises the boiling point of a liquid
- 3) does not affect the boiling point of a liquid
- 4) reduces its volume

Correct Answer: raises the boiling point of a liquid

QID : 823 - The overall efficiency of thermal power plant is ____.

Options:

- 1) Boiler efficiency, turbine efficiency and generator efficiency
- 2) Boiler efficiency, turbine efficiency, generator efficiency and gas cycle efficiency
- 3) Carnot cycle efficiency
- 4) Regenerative cycle efficiency

Correct Answer: Boiler efficiency, turbine efficiency and generator efficiency

QID : 824 - Heat transfer by radiation mainly depends upon ____.

Options:

- 1) its temperature
- 2) nature of the body
- 3) kind and extent of its surface
- 4) All options are correct

Correct Answer: All options are correct

QID : 825 - Thermal diffusivity is ____.

Options:

- 1) a dimensionless parameter
- 2) function of temperature
- 3) used as mathematical model
- 4) a physical property of the material

Correct Answer: a physical property of the material

QID : 826 - 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

Correct Answer: at which refrigerant gas becomes liquid

QID : 827 - With an increase in the thickness of insulation around a circular pipe, heat loss to surroundings due to _____.

Options:

- 1) convection increases, where as due to conduction decreases
- 2) convection decreases, where as due to conduction increases
- 3) both convection and conduction decreases
- 4) both convection and conduction increases

Correct Answer: convection increases, where as due to conduction decreases

QID : 828 - For air with a relative humidity of 80% _____.

Options:

- 1) dry bulb temperature is less than the wet bulb temperature
- 2) dew point temperature is less than wet bulb temperature
- 3) dew point and wet bulb temperatures are equal
- 4) dry bulb and dew point temperatures are equal

Correct Answer: dew point temperature is less than wet bulb temperature

QID : 829 - If a mass of moist air in an airtight vessel is heated to a higher temperature, then _____.

Options:

- 1) specific humidity of the air increases
- 2) specific humidity of the air decreases
- 3) relative humidity of the air increases
- 4) relative humidity of the air decreases

Correct Answer: relative humidity of the air decreases

QID : 830 - In a vapour compression refrigeration system, liquid to suction heat exchanger is used to _____.

Options:

- 1) keep the COP constant
- 2) prevent the liquid refrigerant from entering the compressor
- 3) sub-cool the liquid refrigerant leaving the condenser
- 4) sub-cool the vapour refrigerant from the evaporator

Correct Answer: sub-cool the liquid refrigerant leaving the condenser

QID : 831 - A right-circular cylinder open at top is filled with water and rotated about its vertical axis at such speed that half the water spills out. What is the value of pressure at centre of the bottom?

Options:

- 1) One half its value when cylinder was full
- 2) One fourth its value when cylinder was full
- 3) Zero
- 4) Insufficient data

Correct Answer: Zero

QID : 832 - At a point on a streamline, the velocity is 3 m/sec and the radius of curvature is 9 m. If the rate of increase of velocity along the streamline at this point is 1/3 m/sec/m, then the total acceleration at this point would be _____.

Options:

- 1) 1 m/sec²
- 2) 3 m/sec²
- 3) 1/3 m/sec²
- 4) $\sqrt{2}$ m/sec²

Correct Answer: $\sqrt{2}$ m/sec²

QID : 833 - Which of the following statements is correct regarding an impulse turbine?

Options:

- 1) The steam is initially compressed in a nozzle from low pressure to high pressure.
- 2) The steam is initially expanded in a nozzle from low pressure to high pressure.
- 3) The steam is initially compressed in a nozzle from high pressure to low pressure.
- 4) The steam is initially expanded in a nozzle from high pressure to low pressure.

Correct Answer: The steam is initially expanded in a nozzle from high pressure to low pressure.

QID : 834 - A draft tube is used with _____.

Options:

- 1) impulse turbine
- 2) Pelton wheel turbine
- 3) reaction turbines
- 4) axial turbine pumps

Correct Answer: reaction turbines

QID : 835 - For Newtonian fluid behaviour, the shear stress exerted by the fluid is equal to the _____.

Options:

- 1) Fluid viscosity divided by the velocity gradient parallel to the direction of shear.

- 2) Fluid viscosity divided by the velocity gradient perpendicular to the direction of shear.
- 3) Product of the fluid viscosity and the velocity gradient parallel to the direction of shear.
- 4) Product of the fluid viscosity and the velocity gradient perpendicular to the direction of shear.

Correct Answer: Product of the fluid viscosity and the velocity gradient perpendicular to the direction of shear.

QID : 836 - Which of the following are the advantages of impulse turbine over reaction turbines ?

- A. Occupies less space per unit power.
- B. Compounding is not necessary for speed reduction as the rotor speeds are usually low.
- C. Suitable for high power generation.

Options:

- 1) B and C only
- 2) A only
- 3) C only
- 4) A and C only

Correct Answer: B and C only

QID : 837 - The compressors used in a gas turbine are typically of which type?

Options:

- 1) Centrifugal
- 2) Centripetal
- 3) Reciprocating
- 4) Axial

Correct Answer: Reciprocating

QID : 838 - Which turbine is also called as the propeller turbine?

Options:

- 1) Kaplan turbine
- 2) Francis turbine
- 3) Pelton wheel
- 4) Thompson turbine

Correct Answer: Kaplan turbine

QID : 839 - According to Bernoulli's principle in fluid dynamics, for inviscid flow, increase in speed of fluid leads to which of the following?

Options:

- 1) Increase in pressure and/or increase in fluid's potential energy
- 2) Decrease in pressure and/or increase in fluid's potential energy
- 3) Increase in pressure and/or decrease in fluid's potential energy
- 4) Decrease in pressure and/or decrease in fluid's potential energy

Correct Answer: Decrease in pressure and/or decrease in fluid's potential energy

QID : 840 - The material commonly used for air craft gas turbine is ____.

Options:

- 1) stainless steel
- 2) high alloy steel
- 3) duralumin
- 4) titanium

Correct Answer: duralumin

QID : 841 - The difference of absolute pressure and local atmospheric pressure is known as ____.

Options:

- 1) Negative pressure
- 2) Positive pressure
- 3) Gauge pressure
- 4) Hydraulic pressure

Correct Answer: Gauge pressure

QID : 842 - The sum of pressure head and elevation head is known as ____.

Options:

- 1) dynamic head
- 2) static head
- 3) direct head
- 4) potential head

Correct Answer: static head

QID : 843 - Specific gravity is defined as the ratio of density of fluid and density of water at which temperature (in °C)?

Options:

- 1) 0
- 2) 100
- 3) 4
- 4) It is not dependent on temperature

Correct Answer: 4

QID : 844 - Falling drops of water become spheres due to the property of _____.

Options:

- 1) adhesion
- 2) cohesion
- 3) surface tension
- 4) viscosity

Correct Answer: surface tension

QID : 845 - Fluid flow in a straight circular pipe is typically laminar in nature when the Reynolds number is _____.

Options:

- 1) Less than 2300
- 2) Less than 4000
- 3) More than 2300
- 4) More than 4000

Correct Answer: Less than 2300

QID : 846 - The reduction in fluid pressure that results when a fluid flows through a constricted section of a pipe is known as _____.

Options:

- 1) Orifice effect
- 2) Bernoulli's principle
- 3) Secondary flow
- 4) Venturi effect

Correct Answer: Venturi effect

QID : 847 - For a compressible flow, Mach Number (M) is given by which of the following expression? where v = velocity of fluid in compressible flow c = speed of sound in air

Options:

- 1) $M = v/\sqrt{c}$
- 2) $M = c/v$
- 3) $M = v/c$
- 4) $M = v/c^2$

Correct Answer: $M = v/c$

QID : 848 - Which type of forces dominates a fluid flow with a very high Reynolds Number ($Re \approx 10000$)?

Options:

- 1) Inertial
- 2) Viscous
- 3) Reaction
- 4) Divergent

Correct Answer: Inertial

QID : 849 - To avoid cavitation in centrifugal pumps _____.

Options:

- 1) suction pressure should be low
- 2) delivery pressure should be low
- 3) suction pressure should be high
- 4) delivery pressure should be high

Correct Answer: suction pressure should be high

QID : 850 -

For the continuity equation given by $\vec{\nabla} \cdot \vec{V} = 0$ to be valid, where \vec{V} is the velocity vector, which one of the following is a necessary condition?

दी गई, $\vec{\nabla} \cdot \vec{V} = 0$ कंटिन्यूटी समीकरण की वैधता के लिए, जहां \vec{V} वेग सदिश है, निम्नलिखित में से कौन सी आवश्यक शर्त है?

Options:

- 1) Steady flow
- 2) Irrotational flow
- 3) Inviscid flow
- 4) Incompressible flow

Correct Answer: Incompressible flow

QID : 851 -

Match the items in List 1 and 2.

सूची-1 और सूची-2 का मिलान करें।

List-1 सूची-1		List-2 सूची-2	
A	Compressible flow संपीड्य प्रवाह	1	Reynolds number रेनॉल्ड्स संख्या
B	Free surface flow मुक्त पृष्ठ प्रवाह	2	Nusselt number नुसेल्ट संख्या
C	Boundary layer flow परिसीमा पृष्ठ प्रवाह	3	Weber number वेबर संख्या
D	Pipe flow नलिका प्रवाह	4	Froude number फ्रोड संख्या
E	Heat convection उष्मा संवहन	5	Match number मैच संख्या
		6	Skin friction coefficient उपरिस्तर (स्किन) घर्षण गुणांक

Options:

- 1) A-1, B-4, C-2, D-6; E-3
- 2) A-3, B-4, C-6, D-1; E-2
- 3) A-5, B-3, C-6, D-1; E-4
- 4) A-5, B-3, C-6, D-1; E-2

Correct Answer: A-5, B-3, C-6, D-1; E-2

QID : 852 -

Match the items in List 1 and 2.

सूची-1 और सूची-2 का मिलान करें।

List-1 सूची-1		List-2 सूची-2	
A	Centrifugal compressor अपकेंद्री संपीडक	1	Axial flow अक्षीय प्रवाह
B	Centrifugal pump अपकेंद्री पंप	2	Surging आरोही (सर्जिंग)
C	Pelton wheel पेल्टन चक्र	3	Priming प्राथमिक
D	Kaplan turbine काप्लान टरबाइन	4	Pure impulse शुद्ध आवेग

Options:

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

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

Correct Answer: A-2, B-3, C-4, D-1

QID : 853 - A fluid whose shear stress is linearly proportional to the velocity gradient in the direction perpendicular to the plane of shear is called as _____.

Options:

- 1) Friction fluid
- 2) Stress fluid
- 3) Newtonian fluid
- 4) Cartesian fluid

Correct Answer: Newtonian fluid

QID : 854 - Euler's equation for the motion of liquid assumes that _____.

Options:

- 1) Fluid is viscous
- 2) Fluid is homogeneous and incompressible
- 3) Velocity of flow is non-uniform over the section
- 4) Flow is unsteady along with stream line

Correct Answer: Fluid is homogeneous and incompressible

QID : 855 - A flow whose stream line is represented by a curve, is called _____.

Options:

- 1) One-dimensional flow
- 2) Three dimensional flow
- 3) Two-dimensional flow
- 4) Four-dimensional flow

Correct Answer: Two-dimensional flow

QID : 856 - The frictional resistance of a pipe varies approximately with _____ of the liquid.

Options:

- 1) pressure
- 2) square of velocity
- 3) velocity
- 4) cube of the velocity

Correct Answer: square of velocity

QID : 857 - The cavitation in a hydraulic machine is mainly due to _____.

Options:

- 1) Low velocity
- 2) Low pressure
- 3) High velocity
- 4) High pressure

Correct Answer: Low pressure

QID : 858 - The stress, which is responsible for retaining water in a capillary tube above the free water surface of the water body in which the capillary tube is inserted, is called the _____.

Options:

- 1) Capillary compression
- 2) Capillary tension
- 3) Capillary pore pressure
- 4) None of these

Correct Answer: Capillary tension

QID : 859 - A flow whose stream line is represented by a curve, is called _____.

Options:

- 1) One-dimensional flow
- 2) Three dimensional flow
- 3) Two-dimensional flow
- 4) Four-dimensional flow

Correct Answer: Two-dimensional flow

QID : 860 - A single speed centrifugal pump, feeding a small water supply distribution system of a block of houses, works at _____.

Options:

- 1) Maximum efficiency
- 2) Minimum efficiency
- 3) Reduced efficiency
- 4) None of these

Correct Answer: Reduced efficiency

QID : 861 - In under-damped vibrating system, the amplitude of vibration with reference to time _____.

Options:

- 1) increases linearly
- 2) increases exponentially
- 3) decreases linearly
- 4) decreases exponentially

Correct Answer: decreases exponentially

QID : 862 - A three rotor system has following number of natural frequencies _____.

Options:

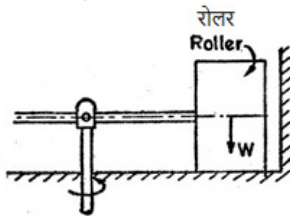
- 1) 1
- 2) 2
- 3) 3
- 4) 4

Correct Answer: 2

QID : 863 -

The figure given below shows a crusher having several cylindrical rollers of weight W . The crushing force due to each roller will be:

नीचे दर्शाई गई आकृति में, संदलित्र में भार W के कुछ बेलनाकार भार लगे हैं। प्रत्येक रोलर का संदलन बल कितना होगा?



Options:

- 1) W
- 2) less than W
- 3) more than W
- 4) unpredictable

Correct Answer: more than W

QID : 864 - The principle of direct and reverse cranks is readily applicable to _____.

Options:

- 1) primary balance
- 2) secondary balance
- 3) balancing of in-line engines
- 4) partial primary balance

Correct Answer: partial primary balance

QID : 865 - In order to facilitate the starting of locomotive in any position, the cranks of a locomotive with two cylinders are placed at following angle to each other _____.

Options:

- 1) 45°
- 2) 90°
- 3) 135°
- 4) 180°

Correct Answer: 90°

QID : 866 - The critical speed depends on _____.

Options:

- 1) mass
- 2) stiffness
- 3) mass and stiffness
- 4) mass, stiffness and eccentricity

Correct Answer: mass and stiffness

QID : 867 - If a more stiff spring is used in Hartnell governor, then the governor will be _____.

Options:

- 1) more sensitive
- 2) less sensitive
- 3) sensitively remains unaffected
- 4) isochronous

Correct Answer: less sensitive

QID : 868 - A gear having 100 teeth is fixed and another gear having 25 teeth revolves around it, the centre lines of both gears being joined by an arm. How many revolutions will be made by gear of 25 teeth for one revolution of arm?

Options:

- 1) 4
- 2) 3
- 3) 5
- 4) 6

Correct Answer: 5

QID : 869 - The power transmitted by a belt is maximum when the maximum tension in the belt compared to centrifugal tension is _____.

Options:

- 1) 2 times
- 2) 3 times
- 3) 4 times
- 4) 2.5 times

Correct Answer: 3 times

QID : 870 - A rotating mass having moment of inertia of 30 kgm² rotates at 800 rpm and is travelling in a curve of 170 metre radius at a speed of 240 km/hr. It will experience a gyroscopic reaction of _____.

Options:

- 1) 10 m kgf
- 2) 100 m kgf
- 3) 1000 m kgf
- 4) 10000 m kgf

Correct Answer: 100 m kgf

QID : 871 - Throw of a cam is the maximum distance of the follower from:

Options:

- 1) Base circle
- 2) Pitch circle
- 3) Root circle
- 4) Prime circle

Correct Answer: Base circle

QID : 872 - The following is the inversion of slider crank mechanism

- A. Whitworth quick return mechanism
- B. Hand pump
- C. Oscillating cylinder engine

Options:

- 1) only A
- 2) only B
- 3) only C
- 4) A, B and C

Correct Answer: A, B and C

QID : 873 - The horse power transmitted by a belt is dependent upon

- A. tension on tight side of belt
- B. tension on slack side of belt
- C. radius of pulley
- D. speed of pulley

Options:

- 1) only A and B
- 2) only B and C
- 3) only D
- 4) A, B, C and D

Correct Answer: A, B, C and D

QID : 874 - Which of the following is a lower pair?

- A. Ball and socket
- B. Piston and cylinder
- C. Cam and follower

Options:

- 1) only A
- 2) only B
- 3) only C
- 4) A and B

Correct Answer: A and B

QID : 875 - The distance between the centres of the rivets in adjacent rows of zigzag riveted joint is known as ____.

Options:

- 1) pitch
- 2) back pitch
- 3) diagonal pitch
- 4) diametric pitch

Correct Answer: diagonal pitch

QID : 876 - A body is resting on a plane inclined at angle 30° to horizontal. What force would be required to slide it down, if the coefficient of friction between body and plane is 0.3?

Options:

- 1) Zero
- 2) 1 kg
- 3) 5 kg
- 4) None of these

Correct Answer: Zero

QID : 877 - A satellite is kept on moving in its orbit around the earth due to ____.

Options:

- 1) centrifugal force
- 2) centripetal force
- 3) gravitational force
- 4) resultant forces acting on satellite

Correct Answer: centripetal force

QID : 878 - The tension in the cable supporting a lift is more when the lift is ____.

Options:

- 1) moving downwards with uniform velocity
- 2) moving upwards with uniform velocity
- 3) stationary
- 4) moving upwards with acceleration

Correct Answer: moving upwards with acceleration

QID : 879 - For steel, the ultimate strength in shear as compared to ultimate strength in tension is ____.

Options:

- 1) same
- 2) $1/2$
- 3) $1/3$
- 4) $2/3$

Correct Answer: $2/3$

QID : 880 - In a simply supported beam, where the shear force is zero, the bending moment will be ____.

Options:

- 1) zero
- 2) maximum
- 3) minimum
- 4) zero or minimum

Correct Answer: maximum

QID : 881 - The stress in a body due to suddenly applied load compared to when it is applied gradually is ____.

Options:

- 1) same
- 2) half
- 3) two times
- 4) four times

Correct Answer: two times

QID : 882 - Modulus of rigidity is defined as the ratio of ____.

Options:

- 1) longitudinal stress and longitudinal strain
- 2) volumetric stress and volumetric strain
- 3) lateral stress and lateral strain
- 4) shear stress and shear strain

Correct Answer: shear stress and shear strain

QID : 883 - The intensity of stress which causes unit strain is called ____.

Options:

- 1) unit stress
- 2) bulk modulus
- 3) modulus of rigidity
- 4) modulus of elasticity

Correct Answer: modulus of elasticity

QID : 884 - The property of a material by virtue of which a body returns to its original shape after removal of the load is called ____.

Options:

- 1) Plasticity
- 2) Elasticity
- 3) Ductility
- 4) Malleability

Correct Answer: Elasticity

QID : 885 - For which material the Poisson's ratio is more than unity?

- A. steel
- B. copper
- C. aluminium
- D. cast iron

Options:

- 1) only A
- 2) only B
- 3) only C
- 4) None of these

Correct Answer: None of these

QID : 886 - A beam is loaded as cantilever. If the load at the end is increased, the failure will occur ____.

Options:

- 1) in the middle
- 2) at the tip below the load
- 3) at the support
- 4) anywhere

Correct Answer: at the support

QID : 887 - At the principal planes ____.

Options:

- 1) the normal stress is maximum or minimum and the shear stress is zero
- 2) the tensile and compressive stresses are zero

3) the tensile stress is zero and the shear stress is maximum

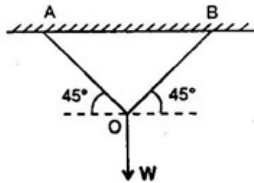
4) no stress acts

Correct Answer: the normal stress is maximum or minimum and the shear stress is zero

QID : 888 -

Two wires AO and BO support a vertical load W at O as shown in the figure below. The wires are of equal length and equal cross sectional area. The tension in each wire is equal to:

नीचे दी गई आकृति के अनुसार AO और BO दो तार एक लम्बवत भार W को O पर समर्थित करते हैं। तार समान लंबाई और समान अनुप्रस्थ काट (क्रॉस सेक्शन) क्षेत्रफल के हैं। प्रत्येक तार में तनाव किसके बराबर होगा?



Options:

1) $W/2$

2) W

3) $\sqrt{2}W$

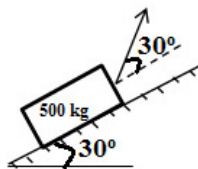
4) $W/\sqrt{2}$

Correct Answer: $W/\sqrt{2}$

QID : 889 -

A weight of 500 kg is held on a smooth plane, inclined at 30° to the horizontal by a force P acting 30° above the plane as shown in the figure below. The reaction of plane on the weight will be:

नीचे दी गई आकृति के अनुसार एक 500 कि.ग्रा. का भार एक चिकनी सतह पर, जो क्षैतिज से 30° पर झुके हुए तल में बल P द्वारा रखी हुई है। तल की भार पर क्या प्रतिक्रिया होगी?



Options:

1) 500 N

2) 250 N

3) 476 N

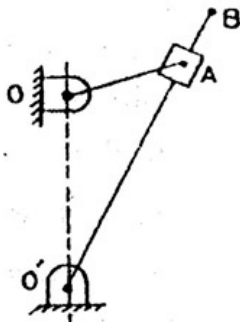
4) 288 N

Correct Answer: 288 N

QID : 890 -

Given figure shows a quick return mechanism. The crank OA rotates clockwise uniformly. $OA = 2$ cm. $OO' = 4$ cm. The ratio of time for forward motion to that for return motion is:

दी गई आकृति में शीघ्र प्रतिवर्ती तंत्र दर्शाया गया है। क्रैंक OA एकसमान गति से घड़ी की सुई की दिशा में घूम रहा है। $OA = 2$ से.मी., $OO' = 4$ से.मी. आगे की ओर गति व पीछे की ओर गति के समय में क्या अनुपात होगा?



Options:

1) 0.5

2) 2

3) $\sqrt{2}$

4) 1

Correct Answer: 2

QID : 891 - Binding wire used to support the joints for soldering is made of _____.

Options:

1) aluminium

2) copper

3) soft iron

4) mild steel

Correct Answer: soft iron

QID : 892 - Which of the following is not a casting process?

Options:

1) Chills process

2) extrusion

3) semi-centrifuge method

4) slush process

Correct Answer: extrusion

QID : 893 - Carburising flame is used to weld metals like _____.

Options:

1) steel

2) copper and brass

3) aluminium, nickel, monel etc.,

4) carburised steel

Correct Answer: aluminium, nickel, monel etc.,

QID : 894 - The most commonly used flame in gas welding is

A. Neutral

B. Oxidising

C. Carburising

Options:

1) only A

2) only B

3) only C

4) only A and B

Correct Answer: only A

QID : 895 - In braze welding, the filler metal is

A. Distributed by capillary attraction

B. Melted and deposited at the point where the weld is to be made

C. Not required

Options:

- 1) only A
- 2) only B
- 3) Both A and B
- 4) only C

Correct Answer: Both A and B

QID : 896 - Magnetic arc blow is _____.

Options:

- 1) a recent welding technique
- 2) used to weld materials
- 3) occurs when welding near equator
- 4) phenomenon of occurrence of splatter because of magnetic fields created in d.c. arc welding

Correct Answer: phenomenon of occurrence of splatter because of magnetic fields created in d.c. arc welding

QID : 897 - Preheating is essential in welding _____.

Options:

- 1) high speed steel
- 2) stainless steel
- 3) cast iron
- 4) german silver

Correct Answer: cast iron

QID : 898 - Tool in the case of ultrasonic machining is made of _____.

Options:

- 1) HSS
- 2) diamond
- 3) brass or copper
- 4) stainless steel

Correct Answer: brass or copper

QID : 899 - Thread rolling is somewhat like _____.

Options:

- 1) cold extrusion
- 2) cold machining
- 3) cold rolling
- 4) cold forging

Correct Answer: cold rolling

QID : 900 - The fatigue strength of metal is improved by setting up compressive stresses in the surface by a process known as _____.

Options:

- 1) lancing
- 2) shot-peening
- 3) hemming
- 4) slugging

Correct Answer: shot-peening