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Question 1

Incorrect

Mark 0.00 out of
1.00

Which point on the stress strain curve occurs after the proportionality limit?

Select one:

- ☐ 1. Upper yield point
- ☐ 2. Lower yield point
- ☒ 3. Elastic limit ✖
- ☐ 4. Ultimate point

The correct answer is: Lower yield point

Question 2

Incorrect

Mark 0.00 out of
1.00

Which of the following is the correct statement ?

Select one:

- ☐ 1. All the reversible engines have the same efficiency
- ☐ 2. All the reversible and irreversible engines have the same efficiency
- ☒ 3. Irreversible engines have maximum efficiency ✖
- ☐ 4. All engines are designed as reversible in order to obtain maximum efficiency.

The correct answer is: All the reversible engines have the same efficiency

Question **3**

Correct

Mark 1.00 out of 1.00

Which one of the following is not a fundamental factor in casting operations?

Select one:

- ☐ 1. Solidification of the metal from its molten state
- ☐ 2. Flow of the molten metal into the mold cavity.
- ☐ 3. Heat transfer during solidification and cooling of metal
- ☒ 4. Application of different allowances ✓

The correct answer is: Application of different allowances

Question **4**

Correct

Mark 1.00 out of 1.00

Under uniaxial loading, the maximum shear stress is _____times the uniaxial stress

Select one:

- ☐ 1. 0.5
- ☒ 2. 2 ✓
- ☐ 3. 1.5
- ☐ 4. 3

The correct answer is: 2

Question **5**

Correct

Mark 1.00 out of 1.00

In which turbine the pressure energy of water is first converted into kinetic energy by means of nozzle kept close to the runner?

Select one:

- ☒ 1. Impulse turbine ✓
- ☐ 2. Reaction turbine
- ☐ 3. Both a. and b.
- ☐ 4. None of the above

The correct answer is: Impulse turbine



Question 6

Incorrect

Mark 0.00 out of 1.00

It is desired to condition the outside air from 70% relative humidity and 45° C dry bulb temperature to 50% relative humidity and 25° C dry bulb temperature (room condition). The practical arrangement will be:

Select one:

- ☐ 1. Dehumidification
- ☒ 2. Cooling and humidification ✖
- ☐ 3. Cooling and dehumidification
- ☐ 4. Dehumidification and pure sensible cooling

The correct answer is: Cooling and dehumidification

Question 7

Incorrect

Mark 0.00 out of 1.00

When two links are connected by a pin joint, their instantaneous center lies

Select one:

- ☒ 1. On their point of contact ✖
- ☐ 2. At the center of curvature
- ☐ 3. At the center of circle
- ☐ 4. At the pin joint

The correct answer is: At the pin joint

Question 8

Incorrect

Mark 0.00 out of 1.00

A material handling equipment – training program helps to:

Select one:

- ☐ 1. Reduce maintenance cost
- ☐ 2. Increase efficiency
- ☒ 3. Reduce accidents ✖
- ☐ 4. All the above

The correct answer is: All the above



Question 9

Incorrect

Mark 0.00 out of 1.00

Brake specific fuel consumption is defined as:

Select one:

- ☐ 1. fuel consumption per hour
- ☒ 2. fuel consumption per km ✖
- ☐ 3. fuel consumption per bp
- ☐ 4. fuel consumption per brake power hour

The correct answer is: fuel consumption per brake power hour

Question 10

Correct

Mark 1.00 out of 1.00

For two-dimensional steady-state conduction heat transfer the finite difference analysis, the Interior node is the arithmetic average of the temperatures of the _____ neighboring nodes. (Take rectangular coordinate for analysis)

Select one:

- ☐ 1. 2
- ☒ 2. 4 ✔
- ☐ 3. 6
- ☐ 4. 8

The correct answer is: 4

Question 11

Correct

Mark 1.00 out of 1.00

In designing of Ships; stability of floating bodies is a necessary concept, so that Floating bodies;

Select one:

- ☒ 1. Are stable when metacenter is above center of gravity ✔
- ☐ 2. Are unstable when metacenter is above center of gravity
- ☐ 3. Are stable when metacenter is below center of gravity
- ☐ 4. All

The correct answer is: Are stable when metacenter is above center of gravity



Question **12**

Incorrect

Mark 0.00 out of 1.00

Maximum percentage of carbon in austenite is

Select one:

- ☐ 1. 0.025%
- ☐ 2. 0.26%
- ☒ 3. 0.8% ✖
- ☐ 4. 1.7%

The correct answer is: 1.7%

Question **13**

Incorrect

Mark 0.00 out of 1.00

Which one is or are further Classification of turbomachines according to the kind of flow medium and pressure generated working machines:

Select one:

- ☐ 1. Pumps
- ☐ 2. Compressors
- ☒ 3. Turbines ✖
- ☐ 4. both a. and b.

The correct answer is: both a. and b.

Question **14**

Incorrect

Mark 0.00 out of 1.00

A system of 100 kg mass undergoes a process in which its specific entropy increases from 0.3 kJ/kg-K to 0.4 kJ/kg-K. At the same time, the entropy of the surroundings decreases from 80 kJ/K to 75 kJ/K. The process is

Select one:

- ☐ 1. Reversible and isothermal
- ☐ 2. Irreversible
- ☐ 3. Reversible
- ☒ 4. Impossible. ✖

The correct answer is: Irreversible



Question **15**

Correct

Mark 1.00 out of 1.00

Two shafts 'A' and 'B' are made of the same material. Diameter of shaft B is twice that of shaft 'A'. the ratio of torque that can be transmitted by shaft 'A' to that of shaft 'B' is

Select one:

- ☐ 1. $1/4$
- ☐ 2. $1/8$
- ☒ 3. $1/16$ ✓
- ☐ 4. $1/2$

The correct answer is: $1/16$

Question **16**

Correct

Mark 1.00 out of 1.00

Recrystallization temperature is one

Select one:

- ☒ 1. At which crystals first start forming from molten metal when it is cooled ✓
- ☐ 2. At which new spherical crystals first begin to form from the old deformed one when a strained metal is heated
- ☐ 3. At which change of allotropic form takes place
- ☐ 4. At which crystals grow bigger in size

The correct answer is: At which crystals first start forming from molten metal when it is cooled

Question **17**

Correct

Mark 1.00 out of 1.00

_____ turbines are also called as parallel flow turbine.

Select one:

- ☐ 1. Radial flow
- ☒ 2. Axial flow ✓
- ☐ 3. Both radial flow and axial flow
- ☐ 4. None of the above

The correct answer is: Axial flow



Question 18

Correct

Mark 1.00 out of 1.00

The operating temperatures of a single stage vapour absorption refrigeration system are: generator: 90°C; condenser and absorber: 40°C; evaporator: 0°C. The system has a refrigeration capacity of 100 kW and the heat input to the system is 160 kW. The solution pump work is negligible. Find the COP of the system and the total heat rejection rate from the system.

Select one:

- ☐ 1. 1.25, 160 kW
- ☒ 2. 0.625, 260 kW ✓
- ☐ 3. 0.94, 260 kW
- ☐ 4. 0.8, 160 kW

The correct answer is: 0.625, 260 kW

Question 19

Incorrect

Mark 0.00 out of 1.00

What are the advantages of using spreadsheets for mechanism analysis

Select one:

- ☒ 1. They have numerous built-in functions ✗
- ☐ 2. They are ease of plotting results,
- ☐ 3. They have ability to recognize formulas.
- ☐ 4. All

The correct answer is: All

Question 20

Incorrect

Mark 0.00 out of 1.00

Which of the following is not hoisting equipment with lifting gear?

Select one:

- ☐ 1. Cage elevators
- ☐ 2. Jib cranes
- ☒ 3. Pulleys ✗
- ☐ 4. Troughed belts

The correct answer is: Troughed belts



Question **21**

Incorrect

Mark 0.00 out of 1.00

For a given compression ratio, as the mixture is made progressively rich from lean the mean effective pressure

Select one:

- ☒ 1. Increases ✖
- ☐ 2. Decreases
- ☐ 3. Initially increases and then decreases
- ☐ 4. Remains more or less same

The correct answer is: Initially increases and then decreases

Question **22**

Incorrect

Mark 0.00 out of 1.00

Which one is the right application of fins.

Select one:

- ☐ 1. Cooling of electronic components
- ☐ 2. Cooling of motorcycle engines.
- ☒ 3. Cooling of small-capacity compressors ✖
- ☐ 4. All

The correct answer is: All

Question **23**

Incorrect

Mark 0.00 out of 1.00

The flow of air over an airfoil is an example of external flow. In such analysis, where the Bernoulli equation can be applied/valid/?

Select one:

- ☒ 1. Near to the airfoil-inside the boundary layer ✖
- ☐ 2. Far from the airfoil-outside the boundary layer
- ☐ 3. Everywhere
- ☐ 4. Cannot be applied

The correct answer is: Far from the airfoil-outside the boundary layer



Question **24**

Incorrect

Mark 0.00 out of 1.00

The condition of refrigerant after passing through the expansion or throttle valve, in a vapour compression system is

Select one:

- ☐ 1. High pressure saturated liquid
- ☒ 2. Low pressure saturated liquid ✖
- ☐ 3. Very wet vapour
- ☐ 4. Dry vapour

The correct answer is: Very wet vapour

Question **25**

Incorrect

Mark 0.00 out of 1.00

The gas constant (R) is equal to the

Select one:

- ☐ 1. sum of two specific heats
- ☐ 2. difference of two specific heats
- ☐ 3. product of two specific heats
- ☒ 4. ratio of two specific heats. ✖

The correct answer is: difference of two specific heats

Question **26**

Correct

Mark 1.00 out of 1.00

The hardness and tensile strength in austenitic stainless steel can be increased by

Select one:

- ☒ 1. Hardening and cold working ✔
- ☐ 2. Normalizing
- ☐ 3. Martempering
- ☐ 4. Full annealing

The correct answer is: Hardening and cold working



Question 27

Correct

Mark 1.00 out of 1.00

Consider the following statements : The maximum temperature produced by the combustion of a unit mass of fuel depends upon 1. LCV 2. ash content 3. mass of air supplied 4. pressure in the furnace. Of these statements :

Select one:

- ☐ 1. 1 alone is correct
- ☒ 2. 1 and 3 are correct ✓
- ☐ 3. 2 and 4 are correct
- ☐ 4. 3 and 4 are correct.

The correct answer is: 1 and 3 are correct

Question 28

Correct

Mark 1.00 out of 1.00

100kW power is to be transmitted by each of two separate shafts A is turning at 250rpm and B at 300rpm, which shaft must have greater diameter?

Select one:

- ☒ 1. A ✓
- ☐ 2. B
- ☐ 3. Both have same diameter
- ☐ 4. Unpredictable

The correct answer is: A

Question 29

Correct

Mark 1.00 out of 1.00

The passage of uniformly varying cross-section in which the kinetic energy of steam increases at the expense of its pressure is called as_____

Select one:

- ☐ 1. steam turbine
- ☒ 2. steam nozzle ✓
- ☐ 3. steam area
- ☐ 4. all of the above

The correct answer is: steam nozzle



Question **30**

Incorrect

Mark 0.00 out of 1.00

In a vapour compression refrigeration system, a condenser is primarily required so that:

Select one:

- ☒ 1. A high pressure can be maintained in the system ✖
- ☐ 2. The refrigerant evaporated in the evaporator can be recycled
- ☐ 3. Performance of the system can be improved
- ☐ 4. Low temperatures can be produced

The correct answer is: The refrigerant evaporated in the evaporator can be recycled

Question **31**

Incorrect

Mark 0.00 out of 1.00

The angle between the direction of the follower motion and a normal to the pitch curve is called

Select one:

- ☒ 1. pitch angle ✖
- ☐ 2. prime angle
- ☐ 3. base angle
- ☐ 4. pressure angle

The correct answer is: pressure angle

Question **32**

Incorrect

Mark 0.00 out of 1.00

The following is used to transport materials having flat bottoms design

Select one:

- ☒ 1. Belt conveyor ✖
- ☐ 2. Roller conveyor
- ☐ 3. Chain conveyor
- ☐ 4. None of the above

The correct answer is: Roller conveyor



Question **33**

Incorrect

Mark 0.00 out of 1.00

The gradual breakdown of metal components within an engine through mechanical abrasion or metal-to-metal contact is

Select one:

- ☐ 1. Wear
- ☒ 2. Metal rub ✖
- ☐ 3. Bending
- ☐ 4. Friction

The correct answer is: Wear

Question **34**

Correct

Mark 1.00 out of 1.00

The non-dimensional parameter known as Stanton number is used in which of the following heat transfer?

Select one:

- ☐ 1. Natural convection heat transfer
- ☐ 2. Unsteady state heat transfer
- ☐ 3. Condensation heat transfer
- ☒ 4. Forced convection heat transfer ✔

The correct answer is: Forced convection heat transfer

Question **35**

Incorrect

Mark 0.00 out of 1.00

In a pantograph, all the pairs are

Select one:

- ☐ 1. Turning pairs
- ☐ 2. Sliding pairs
- ☐ 3. Spherical pairs
- ☒ 4. Self-closed pairs ✖

The correct answer is: Turning pairs



Question **36**

Correct

Mark 1.00 out of 1.00

Which type of dimensionless group you have to know to classify the flow as laminar/turbulent and compressible/incompressible, respectively?

Select one:

- ☐ 1. Density, Mach number
- ☐ 2. Mach number, Reynolds number
- ☐ 3. Reynolds number, density
- ☒ 4. Reynolds number, Mach number ✓

The correct answer is: Reynolds number, Mach number

Question **37**

Incorrect

Mark 0.00 out of 1.00

Dye penetrant method is generally used to locate

Select one:

- ☐ 1. Core defects
- ☐ 2. Surface defects
- ☒ 3. Superficial defects ✗
- ☐ 4. Temporary defects

The correct answer is: Surface defects

Question **38**

Correct

Mark 1.00 out of 1.00

Principal stress is the magnitude of _____ stress acting on the principal plane

Select one:

- ☒ 1. Normal stress ✓
- ☐ 2. Shear stress
- ☐ 3. Both a and b
- ☐ 4. None of the above

The correct answer is: Normal stress



Question **39**

Incorrect

Mark 0.00 out of 1.00

Cementite consist of

Select one:

- ☐ 1. 13% carbon and 87% ferrite
- ☐ 2. 13% Cementite and 87% ferrite
- ☒ 3. 13% ferrite and 87 % cementite ✖
- ☐ 4. 6.67% carbon and 93.33 iron

The correct answer is: 13% carbon and 87% ferrite

Question **40**

Incorrect

Mark 0.00 out of 1.00

Pump transfers the mechanical energy of a motor or of an engine into _____ of a fluid.

Select one:

- ☐ 1. pressure energy
- ☒ 2. kinetic energy ✖
- ☐ 3. either pressure energy or kinetic energy
- ☐ 4. pressure energy, kinetic energy or both

The correct answer is: pressure energy, kinetic energy or both

Question **41**

Incorrect

Mark 0.00 out of 1.00

Given the following information, calculate the heat gain from solar radiation through a south-facing window: SCL 265W/m². Area of the window =2.8 m² U-factor of the window =3.75 W/m² • °K
Shading coefficient of the window = 0.70 Indoor dry-bulb temperature = 25.6°C Outdoor dry-bulb temperature = 35°C

Select one:

- ☐ 1. 519 W
- ☒ 2. 1764 W ✖
- ☐ 3. 220 W
- ☐ 4. 364 W

The correct answer is: 519 W



Question **42**

Correct

Mark 1.00 out of 1.00

The balancing weights are introduced in planes parallel to the plane of rotation of the disturbing mass. To obtain complete dynamic balance, the minimum number of balancing weights to be introduced in different planes is

Select one:

- ☐ 1. 1
- ☒ 2. 2 ✓
- ☐ 3. 3
- ☐ 4. 4

The correct answer is: 2

Question **43**

Incorrect

Mark 0.00 out of 1.00

Which of the following applications of a bucket elevator used for?

Select one:

- ☐ 1. Materials transportation over long distances
- ☐ 2. Materials transportation in vertical
- ☐ 3. Materials transportation in rotational
- ☒ 4. Materials transportation in horizontal + vertical ✗

The correct answer is: Materials transportation in vertical

Question **44**

Incorrect

Mark 0.00 out of 1.00

The main function of Electronic fuel injection (EFI), Ignition control modules (ICM), Engine control modules (ECM), and many others systems are

Select one:

- ☐ 1. To optimize engine lifespan, avoid engine damage, and keep the engine running at peak efficiency at cold aid.
- ☐ 2. To ensure that the engine operates at optimal performance and efficiency while meeting emissions regulations
- ☐ 3. To prevent wear down more quickly and lead to engine damage if it gets too high performance.
- ☒ 4. To increase and control various aspects of an engine such as fuel delivery, ignition timing, emissions, and many other parameters. ✗

The correct answer is: To ensure that the engine operates at optimal performance and efficiency while meeting emissions regulations



Question **45**

Correct

Mark 1.00 out of 1.00

Maximum heat transfer rate can be expected in case of

Select one:

- ☒ 1. Turbulent flow ✓
- ☐ 2. Laminar flow
- ☐ 3. Co-current flow
- ☐ 4. Counter current flow

The correct answer is: Turbulent flow

Question **46**

Incorrect

Mark 0.00 out of 1.00

Economy in material handling can be achieved by

Select one:

- ☒ 1. Employing gravity feed movements ✗
- ☐ 2. Minimizing distance of travel
- ☐ 3. By carrying material to destination without using manual labour
- ☐ 4. All of the above

The correct answer is: All of the above

Question **47**

Incorrect

Mark 0.00 out of 1.00

Which one of the following is the correct statement about friction drag and pressure drag?

Select one:

- ☒ 1. The friction drag is zero for a thin flat surface normal to flow, and maximum for a thin flat surface parallel to flow ✗
- ☐ 2. The larger the separated region, the larger the pressure drag
- ☐ 3. The friction drag in a thin flat surface parallel to flow is equal to the total shear force on the surface.
- ☐ 4. All

The correct answer is: All



Question **48**

Incorrect

Mark 0.00 out of 1.00

Which is false statement about normalizing? Normalizing is done to

Select one:

- ☐ 1. Refine grain structure
- ☐ 2. Reduce segregation in casting
- ☒ 3. Improve Mechanical properties ✖
- ☐ 4. Induced stresses

The correct answer is: Induced stresses

Question **49**

Correct

Mark 1.00 out of 1.00

Which one of the following is not true about thermoplastic materials?

Select one:

- ☐ 1. They have high molecular weight
- ☒ 2. They are not melted when heated ✔
- ☐ 3. They have lightweight and high strength
- ☐ 4. They act as flame-retardants

The correct answer is: They are not melted when heated

Question **50**

Correct

Mark 1.00 out of 1.00

The angle between a principal plane and plane of maximum shear is

Select one:

- ☐ 1. 450
- ☒ 2. 900 ✔
- ☐ 3. 1350
- ☐ 4. 1800

The correct answer is: 900



Question **51**

Incorrect

Mark 0.00 out of 1.00

The function of _____ is to convert high kinetic energy of gases into pressure energy.

Select one:

- ☐ 1. impeller
- ☐ 2. diffuser
- ☒ 3. casing ✖
- ☐ 4. None of the above

The correct answer is: diffuser

Question **52**

Incorrect

Mark 0.00 out of 1.00

Select the INCORECT statement

Select one:

- ☐ 1. Small unitary systems have air cooled condensers, while larger systems can be either air cooled or water cooled
- ☒ 2. A split type room air conditioner do not require duct work ✖
- ☐ 3. A split type air conditioner is more affordable compared to a window air conditioner
- ☐ 4. It is possible to provide fresh air in a window air conditioner, whereas this is not possible in a split air conditioner

The correct answer is: A split type air conditioner is more affordable compared to a window air conditioner

Question **53**

Incorrect

Mark 0.00 out of 1.00

Pneumatic conveyors are

Select one:

- ☒ 1. Run at very high rpm ✖
- ☐ 2. Suitable for powder and small granular size materials
- ☐ 3. Suitable for sticky material
- ☐ 4. All of the above

The correct answer is: Suitable for powder and small granular size materials



Question 54

Incorrect

Mark 0.00 out of 1.00

For CI engine fuels most preferred are

Select one:

- ☐ 1. Napthenes
- ☒ 2. Aromatics ✖
- ☐ 3. Olefins
- ☐ 4. Paraffins

The correct answer is: Paraffins

Question 55

Incorrect

Mark 0.00 out of 1.00

Air at 293 K is flowing with a velocity of 3 m/s over a heated flat square plate. The plate is 0.3 m wide and is maintained at 330 K. Average heat loss from the plate due to convection is (Take $\nu = 16.768 \times 10^{-6} \text{ m}^2/\text{s}$, $Pr = 0.7$, $k = 0.027 \text{ W/m K}$) Calculate the coefficient of heat transfer.

Select one:

- ☐ 1. 23 W/m² K
- ☒ 2. 34 W/m² K ✖
- ☐ 3. 12.3 W/m² K
- ☐ 4. 18 W/m² K

The correct answer is: 12.3 W/m² K

Question 56

Incorrect

Mark 0.00 out of 1.00

Water is flowing steadily in a horizontal pipe at a mass flow rate of 1.2 kg/s and a pressure loss of 70 kPa is measured during the flow. Determine the head loss and the required pumping power to overcome the head loss, respectively?

Select one:

- ☐ 1. 7m, 84 W
- ☒ 2. 7m, 8.4 W ✖
- ☐ 3. 0.5 m, 8.4 W
- ☐ 4. Insufficient given variables

The correct answer is: 7m, 84 W



Question **57**

Incorrect

Mark 0.00 out of 1.00

In a four-stroke IC engine cam shaft rotates at

Select one:

- ☐ 1. Same speed as crankshaft
- ☒ 2. Twice the speed of crankshaft ✖
- ☐ 3. Half the speed of crankshaft
- ☐ 4. None of the above.

The correct answer is: Half the speed of crankshaft

Question **58**

Incorrect

Mark 0.00 out of 1.00

There are fourteen atoms in unit cell of

Select one:

- ☐ 1. Body centered cubic space lattice
- ☐ 2. Face centered cubic space lattice
- ☒ 3. Closed packed hexagonal space lattice ✖
- ☐ 4. None of these

The correct answer is: Face centered cubic space lattice

Question **59**

Correct

Mark 1.00 out of 1.00

Which component of fluid velocity is responsible for transmission of power through rotodynamic machine?

Select one:

- ☐ 1. Radial
- ☐ 2. Axial
- ☒ 3. Tangential ✔
- ☐ 4. None of the above

The correct answer is: Tangential



Question **60**

Correct

Mark 1.00 out of 1.00

Isotropic materials are those which have the same

Select one:

- ☒ 1. Elastic properties in all directions ✓
- ☐ 2. Stresses induced in all directions
- ☐ 3. Thermal properties in all directions
- ☐ 4. Electric and magnetic properties in all directions

The correct answer is: Elastic properties in all directions

Question **61**

Incorrect

Mark 0.00 out of 1.00

The gates of aerofoil section in between the outer and inner ring of guide wheel are called as

_____.

Select one:

- ☒ 1. guide gates ✗
- ☐ 2. guide vanes
- ☐ 3. scrolling gates
- ☐ 4. scrolling vanes

The correct answer is: guide vanes

Question **62**

Correct

Mark 1.00 out of 1.00

The heat treatment process used for softening hardened steel is

Select one:

- ☐ 1. Carburising
- ☐ 2. Normalizing
- ☐ 3. Annealing
- ☒ 4. Tempering ✓

The correct answer is: Tempering



Question **63**

Correct

Mark 1.00 out of 1.00

The relative humidity, during heating and humidification,

Select one:

- ☒ 1. increases ✓
- ☐ 2. decreases
- ☐ 3. may increase or decrease
- ☐ 4. remains constant.

The correct answer is: increases

Question **64**

Incorrect

Mark 0.00 out of 1.00

Shear force at a point in a beam, where maximum bending moment occurs is:

Select one:

- ☒ 1. Maximum ✗
- ☐ 2. Half the maximum
- ☐ 3. Zero
- ☐ 4. None of the above

The correct answer is: Zero

Question **65**

Incorrect

Mark 0.00 out of 1.00

Which of the following alloying elements is added to prevent or restrict grain growth steel?

Select one:

- ☐ 1. Zirconium
- ☐ 2. Vanadium
- ☐ 3. Aluminium
- ☒ 4. Chromium ✗

The correct answer is: Aluminium



Question **66**

Incorrect

Mark 0.00 out of 1.00

A system comprising a single phase is called a

Select one:

- ☒ 1. closed system ✖
- ☐ 2. open system
- ☐ 3. isolated system
- ☐ 4. homogeneous system

The correct answer is: homogeneous system

Question **67**

Correct

Mark 1.00 out of 1.00

If the width and depth of a beam increased, the bending stress will_____

Select one:

- ☐ 1. Increase
- ☒ 2. Decrease ✔
- ☐ 3. Remain unchanged
- ☐ 4. None of these

The correct answer is: Decrease

Question **68**

Incorrect

Mark 0.00 out of 1.00

A 25 mm diameter egg roll ($k = 1 \text{ W/m degree Celsius}$) is roasted with the help of microwave heating. For good quality roasting, it is desired that the temperature at the center of the roll is maintained at 100 degree Celsius when the surrounding temperature is 25 degree Celsius. What should be the heating capacity in W/m^3 of the microwave if the heat transfer coefficient on the surface of the egg roll is $20 \text{ W/m}^2 \text{ degree kelvin}$?

Select one:

- ☐ 1. 613.31 k W/m^3
- ☐ 2. 93.31 k W/m^3
- ☒ 3. 6713.31 kW/m^3 ✖
- ☐ 4. 213.31 k W/m^3

The correct answer is: 213.31 k W/m^3



Question **69**

Incorrect

Mark 0.00 out of 1.00

The Aluminium alloy which is obtained from Copper (3.5–4.5%), Manganese (1.2–1.7%), Nickel (1.8–2.3%), Silicon (0.6%), magnesium (0.6%), iron (0.6%) and Aluminium (92.5%) is known as:

Select one:

- ☐ 1. Magnalium
- ☒ 2. Duralumin ✖
- ☐ 3. Hindallium
- ☐ 4. Y –alloy

The correct answer is: Y –alloy

Question **70**

Incorrect

Mark 0.00 out of 1.00

With the increase in pressure

Select one:

- ☐ 1. boiling point of water increases and enthalpy of evaporation increases
- ☐ 2. boiling point of water increases and enthalpy of evaporation decreases
- ☒ 3. boiling point of water decreases and enthalpy of evaporation increases. ✖
- ☐ 4. increaSe in pressure has no effect on boiling point and enthalpy of vaporization

The correct answer is: boiling point of water increases and enthalpy of evaporation decreases

Question **71**

Correct

Mark 1.00 out of 1.00

Specify the transducer, which is generally used for a dynamic rather than for static measurements.

Select one:

- ☐ 1. Capacitive
- ☐ 2. Resistive
- ☒ 3. Piezoelectric ✔
- ☐ 4. inductive transducer

The correct answer is: Piezoelectric



Question **72**

Incorrect

Mark 0.00 out of 1.00

What is the purpose of testing and validation in the design procedure?

Select one:

- ☐ 1. To identify and fix any issues with the system
- ☒ 2. To finalize the design and release it for production ✖
- ☐ 3. To create a detailed design of the system.
- ☐ 4. To identify potential problems before prototyping

The correct answer is: To identify potential problems before prototyping

Question **73**

Incorrect

Mark 0.00 out of 1.00

What is the sequence followed by the automatic washing machine?

Select one:

- ☒ 1. Washing, soaking, rinsing and drying ✖
- ☐ 2. Soaking, washing, rinsing and drying
- ☐ 3. Washing, soaking, drying and rinsing
- ☐ 4. Drying, soaking, rinsing and washing

The correct answer is: Soaking, washing, rinsing and drying

Question **74**

Incorrect

Mark 0.00 out of 1.00

What is the principle of operation of Potentiometric position sensor

Select one:

- ☐ 1. Resistive Effect
- ☐ 2. Hall Effect
- ☐ 3. Mutual Inductance
- ☒ 4. Eddy current effect ✖

The correct answer is: Resistive Effect



Question **75**

Correct

Mark 1.00 out of 1.00

What is the relative error of an observation taken by an ultrasonic sensor, which predicts the distance of an object to be 3.1 cm but the actual value is 3 cm?

Select one:

- ☐ 1. 1.03
- ☐ 2. 0.1
- ☒ 3. 0.033 ✓
- ☐ 4. 1

The correct answer is: 0.033

Question **76**

Correct

Mark 1.00 out of 1.00

What type of torque is associated with braking system of a vehicle, when brakes are applied?

Select one:

- ☐ 1. Stationary torque
- ☐ 2. Dynamic torque
- ☒ 3. Static torque ✓
- ☐ 4. Distinctive torque

The correct answer is: Static torque

Question **77**

Correct

Mark 1.00 out of 1.00

Thermostats have

Select one:

- ☐ 1. Positive temperature coefficient
- ☒ 2. Negative temperature coefficient ✓
- ☐ 3. Zero temperature coefficient
- ☐ 4. Infinite temperature coefficient

The correct answer is: Negative temperature coefficient



Question **78**

Incorrect

Mark 0.00 out of 1.00

Which of the following device can measure the largest flow rate?

Select one:

- ☐ 1. V-Notch
- ☐ 2. Rotameter
- ☒ 3. Orifice ✖
- ☐ 4. Weir

The correct answer is: Weir

Question **79**

Incorrect

Mark 0.00 out of 1.00

In fluid flow analysis, examining the flow pattern is an essential concept. From the four main flow patterns present in fluid mechanics which one of the following statement never contrast with the behavior of lines?

Select one:

- ☐ 1. Streamlines and timelines are instantaneous lines
- ☒ 2. Pathlines and streaklines are generated by the passage of time ✖
- ☐ 3. Streak lines, streamline and path lines are identical in steady flow
- ☐ 4. All

The correct answer is: All

Question **80**

Incorrect

Mark 0.00 out of 1.00

Smallest change in which a sensor can detect,

Select one:

- ☐ 1. Resolution
- ☐ 2. Accuracy
- ☐ 3. Precision
- ☒ 4. Scale ✖

The correct answer is: Resolution



Question **81**

Incorrect

Mark 0.00 out of 1.00

The ability to give same output reading when same input value is applied repeatedly is known as

Select one:

- ☒ 1. Stability ✖
- ☐ 2. Repeatability
- ☐ 3. Accuracy
- ☐ 4. Sensitivity

The correct answer is: Repeatability

Question **82**

Incorrect

Mark 0.00 out of 1.00

When calibrating an instrument, you may detect the presence of hysteresis error by:

Select one:

- ☐ 1. Comparing the instrument against a known standard that is free from any hysteresis
- ☐ 2. Comparing accuracy at certain points both going up and down the calibration scale
- ☒ 3. Measuring error before and after turning the "dead band" adjustment screw ✖
- ☐ 4. Checking for calibration drift at certain points over long periods of time

The correct answer is: Comparing accuracy at certain points both going up and down the calibration scale

Question **83**

Correct

Mark 1.00 out of 1.00

An instrument in which the value of the measure variable shows the instantaneous value and recalibrated by comparison with an absolute instrument.

Select one:

- ☐ 1. Absolute instrument
- ☒ 2. Secondary instrument ✔
- ☐ 3. Recording instrument
- ☐ 4. Integrating instrument

The correct answer is: Secondary instrument



Question **84**

Incorrect

Mark 0.00 out of 1.00

Which of the following the type of maintenance uses the modern measurement and signal processing methods to accurately diagnose item/equipment condition during operation?

Select one:

- ☐ 1. Predictive Maintenance
- ☐ 2. Corrective Maintenance
- ☒ 3. Preventive maintenance ✖
- ☐ 4. Reactive Maintenance

The correct answer is: Predictive Maintenance

Question **85**

Correct

Mark 1.00 out of 1.00

Which of the following factors affects the reliability

Select one:

- ☐ 1. Design and Production
- ☐ 2. Transportation of Inventory
- ☐ 3. Availability
- ☒ 4. All ✔

The correct answer is: All

Question **86**

Correct

Mark 1.00 out of 1.00

Productivity is increased by:

Select one:

- ☐ 1. Increasing output and increasing input
- ☐ 2. Decreasing output and decreasing input
- ☒ 3. Increasing output and maintaining input ✔
- ☐ 4. Increasing input and decreasing output

The correct answer is: Increasing output and maintaining input



Question **87**

Correct

Mark 1.00 out of 1.00

Which of the following plant layout is used in the production of Airplane

Select one:

- ☒ 1. Fixed position layout ✓
- ☐ 2. Process layout
- ☐ 3. Product layout
- ☐ 4. Combined layout

The correct answer is: Fixed position layout

Question **88**

Correct

Mark 1.00 out of 1.00

Which of the following is not true about process layout

Select one:

- ☐ 1. General-purpose equipment is used
- ☐ 2. Changeover is rapid
- ☒ 3. Material flow is continuous ✓
- ☐ 4. Material handling equipment is flexible

The correct answer is: Material flow is continuous

Question **89**

Incorrect

Mark 0.00 out of 1.00

Which of the following is not true about payback period

Select one:

- ☐ 1. It consider the time value of money
- ☐ 2. It does not look at the total project.
- ☐ 3. It is simple and easy to use.
- ☒ 4. The figures are based on project cash-flow only ✗

The correct answer is: It consider the time value of money



Question **90**

Correct

Mark 1.00 out of 1.00

Dislocations in materials refer to the following type of defect

Select one:

- ☐ 1. Point defect
- ☒ 2. Line defect ✓
- ☐ 3. Plane defect
- ☐ 4. Volumetric defect

The correct answer is: Line defect

Question **91**

Correct

Mark 1.00 out of 1.00

Which of the following is a definition of a machine?

Select one:

- ☐ 1. A mechanical device powered by human strength
- ☒ 2. A mechanical device that modify a force and motion ✓
- ☐ 3. A mechanical device that uses a liquid to create energy
- ☐ 4. A mechanical device that never uses energy but do a particular work

The correct answer is: A mechanical device that modify a force and motion

Question **92**

Correct

Mark 1.00 out of 1.00

What is reliability in mechanical design?

Select one:

- ☐ 1. The probability of a machine to withstand with extreme temperatures
- ☐ 2. The probability of a machine to produce a certain amount of energy
- ☒ 3. The probability that a machine will perform its intended function without failure ✓
- ☐ 4. The ability of a machine to be easily repaired

The correct answer is: The probability that a machine will perform its intended function without failure



Question **93**

Correct

Mark 1.00 out of 1.00

Fatigue failures occurs due to:

Select one:

- ☐ 1. Prolonged exposure to excessive stress
- ☒ 2. Cycling loading ✓
- ☐ 3. Sudden impact or overloading
- ☐ 4. Aging of the material

The correct answer is: Cycling loading

Question **94**

Correct

Mark 1.00 out of 1.00

Brittle and ductile material tends to fail through:

Select one:

- ☒ 1. Fracture and ductile deformation respectively ✓
- ☐ 2. Ductile deformation and fracture respectively
- ☐ 3. Creep and fracture respectively
- ☐ 4. Ductile deformation and creep respectively

The correct answer is: Fracture and ductile deformation respectively

Question **95**

Correct

Mark 1.00 out of 1.00

Which of the following is a permanent fastening?

Select one:

- ☐ 1. Bolts
- ☐ 2. Keys
- ☐ 3. Cotters
- ☒ 4. Rivets ✓

The correct answer is: Rivets



Question **96**

Incorrect

Mark 0.00 out of 1.00

Which of the following property is essential for spring materials?

Select one:

- ☒ 1. Stiffness ✖
- ☐ 2. Ductility
- ☐ 3. Resilience

The correct answer is: Resilience

Question **97**

Incorrect

Mark 0.00 out of 1.00

Which one of the following is not the function of knee on milling machine?

Select one:

- ☐ 1. it supports the entire structure of the machine
- ☐ 2. it lifts up and down on the vertical ways of the column face.
- ☐ 3. it supports the saddle and the table
- ☒ 4. it houses the feed mechanism of the table & different controls. ✖

The correct answer is: it supports the entire structure of the machine

Question **98**

Incorrect

Mark 0.00 out of 1.00

Which one of the following does not belongs to tailstock offsetting method?

Select one:

- ☐ 1. It is employed for taper turning jobs that can be turned between centers.
- ☐ 2. It is done by tilting the axis of rotation of the work piece at an angle to the lathe axis.
- ☐ 3. It can be tilted to the desired angle for turning large taper angle and short taper length
- ☒ 4. Only external tapers can be machined by using this method. ✖

The correct answer is: It can be tilted to the desired angle for turning large taper angle and short taper length



Question **99**

Correct

Mark 1.00 out of 1.00

. Which one of the following is not true about the main objective of deformation processes?

Select one:

- ☐ 1. to refine grain structure and induce the directional properties into the material
- ☐ 2. to achieve high dimensional accuracy and to improve mechanical properties of the metal.
- ☐ 3. to deform both brittle and ductile material in to the required shape.
- ☒ 4. to easily & plastically deform hard materials. ✓

The correct answer is: to easily & plastically deform hard materials.

Question **100**

Incorrect

Mark 0.00 out of 1.00

_____is metal forming process in which an axially symmetric part is gradually shaped over a rotating mandrel using a rounded tool or roller to form conical and curvilinear shapes

Select one:

- ☐ 1. spinning
- ☒ 2. drawing ✗
- ☐ 3. ironing
- ☐ 4. redrawing

The correct answer is: spinning

