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Notations :

- 1.Options shown in green color and with ✓ icon are correct.
- 2.Options shown in red color and with ✖ icon are incorrect.

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Actual Answer Key:	Yes
Calculator:	Scientific
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Rough Sketch/Notepad Required?:	No
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Show Watermark on Console?:	Yes
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Question Shuffling Allowed : Yes

Question Number : 1 Question Id : 231098301 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0.66

Two large horizontal plane surfaces are 2 cm apart. The space between the surfaces is filled with the fluid of dynamic viscosity of 8 poise. What will be the force required to drag a very thin plate of surface area 1 m² between the two large plane surface with the speed of 0.5 m/s. The thin plate is equidistance of 1 cm from each large plane surface. Buoyancy and gravitational effects are considered to be negligible.

Options :

1. ✖ 0.8 N

2. ✖ 8 N

3. ✓ 80 N

4. ✗ 800 N

Question Number : 2 Question Id : 231098302 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The pressure inside a droplet of water is 0.2 kPa greater than outside atmospheric pressure. What will be the diameter of droplet of water? [Surface tension of water in contact with air is 0.07 N/m]

Options :

1. ✗ 0.7 mm

2. ✓ 1.4 mm

3. ✗ 14 mm

4. ✗ 0.14 mm

Question Number : 3 Question Id : 231098303 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A velocity field is given as

$$\vec{V} = Axy\hat{i} - Byz\hat{j}$$

Where, A and B are constants. x , y , z are in metre and t is in seconds. Which of the following is true of this flow field?

Options :

1. ✗ Steady and 3-dimensional

2. ✗ Unsteady and 2-dimensional

3. ✗ Steady and 2-dimensional

4. ✓ Unsteady and 3-dimensional

Question Number : 4 Question Id : 231098304 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A solid cylinder has following specifications:

Diameter = 6 m,

Length = 3 m,

Specific gravity of cylinder material = 0.6

The cylinder is floating in water with its axis vertical. Which of the following is true for the cylinder?

[M = Metacentre of cylinder, G = Centre of gravity of cylinder]

Options :

1. ✗ Metacentre (M) is 0.65 m below the centre of gravity (G) and it is in unstable equilibrium.
2. ✗ Metacentre (M) is 0.65 m below the centre of gravity (G) and it is in stable equilibrium.
3. ✓ Metacentre (M) is 0.65 m above the centre of gravity (G) and it is in stable equilibrium.
4. ✗ Metacentre (M) is 0.65 m above the centre of gravity (G) and it is in unstable equilibrium.

Question Number : 5 Question Id : 231098305 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The stream function for 2-D flow is given by

$$\psi = x^2 + y^2$$

What will be the velocity of flow at (1,1)? [Unit may be taken as arbitrary]

Options :

1. ✗ Zero
2. ✗ 2

3. ✓ $2\sqrt{2}$

4. ✗ 4

Question Number : 6 Question Id : 231098306 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

An open cylindrical vessel of 20 cm diameter and 100 cm long contains water up to a height of 80 cm. What will be the rotational speed of the vessel about its vertical axis such that no water spills? [$g = 10 \text{ m/s}^2$]

Options :

1. ✗ $10\sqrt{2} \text{ rad/s}$

2. ✓ $20\sqrt{2} \text{ rad/s}$

3. ✗ $30\sqrt{2} \text{ rad/s}$

4. ✗ $40\sqrt{2} \text{ rad/s}$

Question Number : 7 Question Id : 231098307 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Water is flowing in a smooth pipe of uniform diameter 10 cm, has following data:

At section 1: Pressure = 50 kPa, Elevation = 10 m

At section 2: Pressure = 20 kPa, Elevation = 12 m

The velocity of flow is 1 m/s. Which of the following is correct for this pipe?

Options :

1. ✗ Flow is taking place from section 1 to section 2 with a head loss of 2 m.

2. ✓ Flow is taking place from section 1 to section 2 with a head loss of 1 m.

3. ✗ Flow is taking place from section 2 to section 1 with a head loss of 1 m.

4. ✖ Flow is taking place from section 2 to section 1 with a head loss of 2 m.

Question Number : 8 Question Id : 231098308 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A fluid of viscosity 7 poise and density 1300 kg/m^3 is flowing through a circular pipe of diameter 200 mm. The maximum shear stress at the pipe wall is 200 N/m^2 . What will be the pressure loss in one metre of pipe length?

Options :

1. ✖ 400 N/m^2

2. ✔ 4000 N/m^2

3. ✖ 6000 N/m^2

4. ✖ 8000 N/m^2

Question Number : 9 Question Id : 231098309 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Oil (SG = 0.9, Dynamic viscosity = 1 poise) is flowing with a mean velocity of 1 m/s between two fixed parallel plates, which are 1 cm apart. What will be shear stress at the surface of plate?

Options :

1. ✖ 40 N/m^2

2. ✖ 50 N/m^2

3. ✔ 60 N/m^2

4. ✖ 70 N/m^2

Question Number : 10 Question Id : 231098310 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A smooth pipe of diameter 100 mm and length 100 m carries crude oil (Kinematic viscosity = 0.4 stokes and density = 900 kg/m^3) at velocity of 2 m/s. What will be the power (in watts) required to maintain the flow? [Friction factor = 0.03, $g = 10 \text{ m/s}^2$]

Options :

1. ✖ 282.7

2. ✖ 565.4

3. ✔ 848.2

4. ✖ 1130.9

Question Number : 11 Question Id : 231098311 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3 Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

What will be the velocity of flow of an oil (Specific gravity = 0.8) through a pipe, if the difference of mercury level in a differential U-tube manometer connected to the two tappings of the pitot-static tube is 50 mm. [Coefficient of pitot tube = 1, $g = 10 \text{ m/s}^2$]

Options :

1. ✖ 1 m/s

2. ✖ 2 m/s

3. ✖ 3 m/s

4. ✔ 4 m/s

Question Number : 12 Question Id : 231098312 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3 Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which of the following property is used as thermometric property in constant – volume gas thermometer?

Options :

1. ✖ Volume

2. ✓ Pressure

3. ✗ Electric resistance

4. ✗ Voltage

Question Number : 13 Question Id : 231098313 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

In a reversible non-flow process, the gas undergoes a process according to,

$$pV = 2.8$$

Where, p is in bar and volume is in m^3 . What will be the work done by the gas if pressure of gas increases from 0.7 bar to 7 bar? [Assuming, $e^{2.3} = 10$]

Options :

1. ✗ 6.4 kJ

2. ✗ - 6.4 kJ

3. ✓ - 644 kJ

4. ✗ - 64 kJ

Question Number : 14 Question Id : 231098314 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The rate of heat transfer between an electric motor and its surroundings is given by

$$Q = e^{-t} - 1$$

Where, t is in seconds and Q is in kW. The shaft of motor rotates at a speed of 200 rad/s and applies a torque of 20 N-m on the load. The motor draws a constant electrical power input of 5 kW. The time rate of change of energy (kW) of motor is given by:

Options :

1. ✓ e^{-t}

2. ✖ $1 + e^{-t}$

3. ✖ $1 - e^{-t}$

4. ✖ $2 + e^{-t}$

Question Number : 15 Question Id : 231098315 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A cylinder of 50-litre capacity contains oxygen at temperature of 27°C and at absolute pressure 10 MPa. What will be the density of oxygen? [Gas constant for oxygen is 0.26 kJ/kg-K]

Options :

1. ✖ 1.28 kg/m^3

2. ✖ 12.8 kg/m^3

3. ✔ 128.2 kg/m^3

4. ✖ 1282 kg/m^3

Question Number : 16 Question Id : 231098316 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A vessel has two compartments. First compartment contains 2 kg of dry saturated steam at 7 bar [$v_{g@7 \text{ bar}} = 0.27 \text{ m}^3/\text{kg}$] and second compartment contains 1 kg of steam of dryness fraction of 0.8 at 3.5 bar [$v_{g@3.5 \text{ bar}} = 0.55 \text{ m}^3/\text{kg}$]. After the partition is removed, the pressure of the mixture is found to be 5 bar [$v_{g@5 \text{ bar}} = 0.37 \text{ m}^3/\text{kg}$]. Neglecting the volume of water, what will be the specific volume of mixture?

Options :

1. ✖ $0.281 \text{ m}^3/\text{kg}$

2. ✔ $0.326 \text{ m}^3/\text{kg}$

3. ✖ 0.462 m³/kg

4. ✖ 0.521 m³/kg

Question Number : 17 Question Id : 231098317 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The efficiency of a Carnot engine is 25%. The efficiency is increased to 30% when the sink temperature is reduced by 20°C. What will be the source temperature?

Options :

1. ✖ 300 K

2. ✔ 400 K

3. ✖ 500 K

4. ✖ 600 K

Question Number : 18 Question Id : 231098318 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A heat engine is supplied with 1200 kW of heat at a constant temperature of 600 K and it rejects 700 kW of heat at 300 K. Which of the following is true for this heat engine?

Options :

1. ✖ It is a reversible cycle.

2. ✔ It is an irreversible cycle.

3. ✖ It is an impossible cycle.

4. ✖ The efficiency of this cycle is greater than 50%.

Question Number : 19 Question Id : 231098319 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0.66

A 30 ohm resistor carrying a constant current of 1 ampere is kept at a constant temperature of 27°C by a stream of cooling water. What will be the rate of change in entropy of universe?

Options :

1. ✖ 10 W/K

2. ✔ 0.1 W/K

3. ✖ 0.1 J/K

4. ✖ 10 J/K

Question Number : 20 Question Id : 231098320 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0.66

Which of the following Maxwell relation is INCORRECT?

Options :

1. ✖ $\left(\frac{\partial T}{\partial v}\right)_s = -\left(\frac{\partial p}{\partial s}\right)_v$

2. ✖ $\left(\frac{\partial T}{\partial p}\right)_s = \left(\frac{\partial v}{\partial s}\right)_p$

3. ✖ $\left(\frac{\partial p}{\partial T}\right)_v = \left(\frac{\partial s}{\partial v}\right)_T$

4. ✔ $\left(\frac{\partial v}{\partial T}\right)_p = \left(\frac{\partial p}{\partial s}\right)_T$

Question Number : 21 Question Id : 231098321 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0.66

The vapour pressure (mm Hg) of solid NH_3 is given by

$$\ln p = 23.03 - \frac{3754}{T}$$

and that of liquid ammonia is given by

$$\ln p = 19.49 - \frac{3063}{T}$$

Where, T is in kelvin. What will be the triple point temperature of NH_3 ?

Options :

1. ✖ 140.3 K

2. ✔ 195.2 K

3. ✖ 225 K

4. ✖ 280 K

Question Number : 22 Question Id : 231098322 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which of the following is true for dual cycle? [x = Compression ratio, y = Expansion ratio, z = Cut-off ratio]

Options :

1. ✔ $x = yz$

2. ✖ $x = y + z$

3. ✖ $x = \frac{y}{z}$

4. ✖ $x = y - z$

Question Number : 23 Question Id : 231098323 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A refrigerator is operating on ideal vapour compression cycle with R134a as working fluid at flow rate of 0.1 kg/s. Data given are:

Enthalpy at the inlet of the compressor = 240 kJ/kg

Enthalpy at the outlet of the compressor = 280 kJ/kg

Enthalpy at the outlet of the condenser = 100 kJ/kg

What will be the refrigeration capacity and COP of the refrigerator, respectively?

Options :

1. ✓ 14 kW, 3.5

2. ✗ 4 kW, 4

3. ✗ 10 kW, 2

4. ✗ 5 kW, 3.5

Question Number : 24 Question Id : 231098324 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Chemical formula of R-22 is given by:

Options :

1. ✗ CCl_4F

2. ✗ CCl_2F_2

3. ✗ CHCl_2F

4. ✓ CHClF_2

Question Number : 25 Question Id : 231098325 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A diesel engine has a compression ratio of 16 and cut-off takes place at 6% of the stroke. What will be the cut-off ratio?

Options :

1. ✖ 1.6

2. ✔ 1.9

3. ✖ 2.1

4. ✖ 2.4

Question Number : 26 Question Id : 231098326 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Two forces of equal magnitude (F) act at an angle of β to each other. The resultant of these forces will be given by:

Options :

1. ✖ $2F$

2. ✖ $2F \cos \beta$

3. ✔ $2F \cos\left(\frac{\beta}{2}\right)$

4. ✖ $F \cos\left(\frac{\beta}{2}\right)$

Question Number : 27 Question Id : 231098327 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Two vectors are given by

$$P = 6\hat{i} + 10\hat{j} - 5\hat{k}, Q = 5\hat{i} + 2\hat{j} + 10\hat{k}$$

Which of the following is true for these vectors?

Options :

1. ✖ Both the vectors are parallel

2. ✓ Both the vectors are perpendicular to each other

3. ✗ Angle between the vectors is 30°

4. ✗ Angle between the vectors is 60°

Question Number : 28 Question Id : 231098328 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A force $\vec{F} = (10\hat{i} + 8\hat{j} - 5\hat{k})$ acts at a point P(2,5,6). What will be the moment of the force about the point Q(3,1,4)?

Options :

1. ✓ $-36\hat{i} + 15\hat{j} - 48\hat{k}$

2. ✗ $18\hat{i} + 16\hat{j} - 37\hat{k}$

3. ✗ $32\hat{i} - 31\hat{j} - 4\hat{k}$

4. ✗ Zero

Question Number : 29 Question Id : 231098329 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The distance of centroid of a semi-circular lamina of radius R from the straight edge of this semi-circular lamina will be:

Options :

1. ✗ $\frac{8R}{3\pi}$

2. ✓ $\frac{4R}{3\pi}$

3. ✖ $\frac{2R}{3\pi}$

4. ✖ $\frac{R}{3\pi}$

Question Number : 30 Question Id : 231098330 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Moment of inertia (second moment of area) of triangular lamina about base and centroidal axis (parallel to base), respectively will be _____ and _____. [B = length of base of triangular section, H = Height of triangular section]

Options :

1. ✖ $\frac{BH^3}{3}, \frac{BH^3}{36}$

2. ✖ $\frac{BH^3}{36}, \frac{BH^3}{12}$

3. ✔ $\frac{BH^3}{12}, \frac{BH^3}{36}$

4. ✖ $\frac{BH^3}{3}, \frac{BH^3}{12}$

Question Number : 31 Question Id : 231098331 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A particle moving with an acceleration of 6 m/s^2 covers 40 m during 5th second of its journey. What was the initial velocity of particle?

Options :

1. ✖ 10 m/s

2. ✖ 11 m/s

3. ✖ 12 m/s

4. ✔ 13 m/s

Question Number : 32 Question Id : 231098332 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

An elevator has an upward acceleration of 1 m/s^2 . What will be the force transmitted to the floor of the elevator by a man of weight 500 N travelling in the elevator? [$g = 10 \text{ m/s}^2$]

Options :

1. ✔ 550 N

2. ✖ 500 N

3. ✖ 450 N

4. ✖ 400 N

Question Number : 33 Question Id : 231098333 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A motorist is driving at 25 m/s on the curved road of radius 500 m. He suddenly applies the brakes and that causes the speed to decrease to 15 m/s at the constant rate in 10 seconds. What will be the tangential component (a_t) and the normal component (a_n) of acceleration immediately after the application of brakes?

Options :

1. ✖ $a_t = -1 \text{ m/s}^2$, $a_n = 1 \text{ m/s}^2$

2. ✔ $a_t = -1 \text{ m/s}^2$, $a_n = 1.25 \text{ m/s}^2$

3. ✖ $a_t = -1.25 \text{ m/s}^2$, $a_n = 1 \text{ m/s}^2$

4. ✖ $a_t = -1.25 \text{ m/s}^2$, $a_n = 2 \text{ m/s}^2$

Question Number : 34 Question Id : 231098334 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A block of mass 5 kg slides down from rest along a frictionless inclined plane that makes an angle of 30° with horizontal. What will be the speed of the block after it covers a distance of 3.6 m along the plane? [$g = 10 \text{ m/s}^2$]

Options :

1. ✖ 5 m/s

2. ✔ 6 m/s

3. ✖ 7 m/s

4. ✖ 8 m/s

Question Number : 35 Question Id : 231098335 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A specimen of an alloy is made into a cylindrical bar of 12.00 mm diameter and 200.00 mm length. This bar is loaded in axial tension up to the proportional limit when the load is 40 kN. At this load the length was measured as 201 mm and diameter was measured as 11.98 mm. What will be the Poisson's ratio?

Options :

1. ✖ 0.25

2. ✖ 0.29

3. ✔ 0.33

4. ✖ 0.38

Question Number : 36 Question Id : 231098336 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

If modulus of rigidity of a material is 80 GPa and modulus of elasticity is 200 GPa, what will be the bulk modulus of material?

Options :

1. ✓ 133.3 GPa

2. ✗ 153.3 GPa

3. ✗ 163.3 GPa

4. ✗ 173.3 GPa

Question Number : 37 Question Id : 231098337 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3 Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The stiffness of an axially loaded bar is defined as _____. [E = Modulus of elasticity, A = Area of cross-section of bar, L = Length of bar]

Options :

1. ✓ $\frac{EA}{L}$

2. ✗ $\frac{L}{EA}$

3. ✗ $\frac{E}{AL}$

4. ✗ $\frac{AL}{E}$

Question Number : 38 Question Id : 231098338 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3 Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A pump is used to transport the water. The maximum power required through the shaft is 62.8 W, when it rotates at 100 rpm. What will be the diameter of shaft (in cm) if the maximum permissible shearing stress is 100 MN/m²? [$\pi = 3.14$]

Options :

1. ✓ $\left(\frac{96}{314}\right)^{1/3}$

2. ✗ $\left(\frac{196}{314}\right)^{1/3}$

3. ✗ $\left(\frac{296}{314}\right)^{1/3}$

4. ✗ $\left(\frac{396}{314}\right)^{1/3}$

Question Number : 39 Question Id : 231098339 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

If a gradual tensile load (P) is applied to an elastic bar axially, the change in the length of bar is x . What will be the strain energy stored in the material of the bar?

Options :

1. ✗ Px

2. ✓ $\frac{1}{2} Px$

3. ✗ $2 Px$

4. ✗ Zero

Question Number : 40 Question Id : 231098340 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A simply supported beam, 6.0 m long, carries a single concentrated load of P at 1.0 m from one end. The cross-section of beam is square with the side of 100 mm. What will be the maximum value of P so that stress in material should not exceed 8 MN/m^2 ?

Options :

- 1. ✖ 1 kN
- 2. ✖ 1.2 kN
- 3. ✖ 1.4 kN
- 4. ✔ 1.6 kN

Question Number : 41 Question Id : 231098341 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0.66

Which of the following is most suitable for Kaplan turbine?

Options :

- 1. ✖ It works under the head between 500-1000 m
- 2. ✖ It works under the head between 1000-2000 m
- 3. ✔ It works under the head between 5-70 m
- 4. ✖ It works under the head between 200-500 m

Question Number : 42 Question Id : 231098342 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0.66

Two homologous pumps A and B are to run at the same speed. Pump A has an impeller diameter of 50 cm and discharge $0.4 \text{ m}^3/\text{s}$ under the head of 50 m. What will be the diameter of pump B, if its discharge is $0.2 \text{ m}^3/\text{s}$? [Assuming $2^{1/3} = 1.26$]

Options :

- 1. ✖ 63.0 cm
- 2. ✖ 52.31 cm

3. ✖ 47.17 cm

4. ✔ 39.68 cm

Question Number : 43 Question Id : 231098343 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Flow coefficient in axial flow compressor is defined as _____. [Axial velocity of flow = v_f , Blade velocity at periphery = u]

Options :

1. ✔ $\frac{v_f}{u}$

2. ✖ $\frac{u}{v_f}$

3. ✖ $\frac{v_f + u}{u}$

4. ✖ $\frac{u^2}{v_f}$

Question Number : 44 Question Id : 231098344 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which of the following is a water-tube boiler?

Options :

1. ✖ Cochran boiler

2. ✔ Babcock and Wilcox boiler

3. ✖ Lancashire boiler

4. ✖ Locomotive boiler

Question Number : 45 Question Id : 231098345 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which of the following is a boiler accessory?

Options :

1. ✖ Safely valve

2. ✔ Economiser

3. ✖ Pressure gauge

4. ✖ Fusible plug

Question Number : 46 Question Id : 231098346 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which of the following is true for steam condenser?

Options :

1. ✖ Exhaust steam and cooling water do not come in direct contact in jet condenser

2. ✖

Exhaust steam and cooling water come in direct contact and mixed together in surface condenser

3. ✖ Evaporative condenser is a type of jet condenser

4. ✔ Evaporative condenser is a type of surface condenser

Question Number : 47 Question Id : 231098347 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The following observations are recorded for steam condenser:

Condenser vacuum = 680 mm (Hg)

Barometer reading = 760 mm (Hg)

Condenser temperature = 35°C

$P_{\text{sat}@35^\circ\text{C}} = 42 \text{ mm Hg}$

What will be the vacuum efficiency?

Options :

1. ✖ 82.4%

2. ✖ 88.4%

3. ✔ 94.7%

4. ✖ 98.4%

Question Number : 48 Question Id : 231098348 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Cooling tower is used to:

Options :

1. ✖ cool the space or room

2. ✔ cool the hot water coming from the condenser

3. ✖ freeze the water

4. ✖ increase the pressure of water

Question Number : 49 Question Id : 231098349 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Compression ratio of an internal combustion engine is defined as _____. [V_s = Swept volume, V_c = Clearance volume]

Options :

1. ✖ $\frac{V_c + V_s}{V_s}$

2. ✖ $\frac{V_c}{V_s + V_c}$

3. ✔ $\frac{V_c + V_s}{V_c}$

4. ✖ $\frac{V_s}{V_c}$

Question Number : 50 Question Id : 231098350 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3 Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which of the following is true for four-stroke engines?

Options :

1. ✖ One power stroke is obtained in each revolution of crankshaft.

2. ✔ One power stroke is obtained in every two revolutions of crankshaft.

3. ✖ One power stroke is obtained in every four revolutions of crankshaft.

4. ✖ One power stroke is obtained in every six revolutions of crankshaft.

Question Number : 51 Question Id : 231098351 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3 Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The mechanical efficiency of a single-cylinder, four-stroke engine is 90%. The frictional power is 30 kW. What will be the brake power developed by the engine?

Options :

1. ✖ 240 kW

2. ✔ 270 kW

3. ✖ 300 kW

4. ✖ 330 kW

Question Number : 52 Question Id : 231098352 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Atomic packing factor for a FCC structure is:

Options :

1. ✖ 0.52

2. ✔ 0.74

3. ✖ 0.68

4. ✖ 0.90

Question Number : 53 Question Id : 231098353 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Atomic radius of BCC structure is given by _____.

[a = Length of cube edge]

Options :

1. ✔ $\frac{a\sqrt{3}}{4}$

2. ✖ $\frac{4a}{\sqrt{3}}$

3. ✖ $\frac{a}{2\sqrt{2}}$

4. ✖ $\frac{a}{2}$

Question Number : 54 Question Id : 231098354 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which of the following is NOT a point defect?

Options :

1. ✔ Edge dislocation

2. ✖ Vacancy

3. ✖ Substitutional impurity

4. ✖ Interstitial impurity

Question Number : 55 Question Id : 231098355 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which of the following is the surface defect?

Options :

1. ✖ Vacancy

2. ✖ Screw dislocation

3. ✔ Twin boundaries

4. ✖ Edge dislocation

Question Number : 56 Question Id : 231098356 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Under steady state condition, Fick's first law is given as

$$J = -D \frac{dc}{dx}$$

Where, J = Diffusion flux,

D = Diffusion coefficient,

$\frac{dc}{dx}$ = Concentration gradient

The unit of diffusion coefficient will be:

Options :

1. ✖ m/s^2

2. ✖ m/s

3. ✔ m^2/s

4. ✖ kg/m^3

Question Number : 57 Question Id : 231098357 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

“The formation of a new set of strain free grains within a previously cold worked material” is known as:

Options :

1. ✔ recrystallization

2. ✖ resilience

3. ✖ ductility

4. ✖ passivity

Question Number : 58 Question Id : 231098358 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Fully recoverable but time-dependent deformation is known as:

Options :

1. ✖ elastic deformation

2. ✔ anelastic deformation

3. ✖ viscoelastic deformation

4. ✖ plastic deformation

Question Number : 59 Question Id : 231098359 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which of the following is true for Voigt-Kelvin model of viscoelastic materials?

Options :

1. ✔ It is a parallel combination of a spring and a dashpot

2. ✖ It is a series combination of a spring and a dashpot

3. ✖ It is a parallel combination of two springs

4. ✖ It is a parallel combination of two dashpots

Question Number : 60 Question Id : 231098360 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

“The measure of material’s resistance to fracture when a crack is present” is known as:

Options :

- 1. ✖ hardness
- 2. ✔ fracture toughness
- 3. ✖ toughness
- 4. ✖ ductile fracture

Question Number : 61 Question Id : 231098361 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

“A very weak form of magnetism that is non-permanent, persist only when an external field is applied and having a negative value of magnetic susceptibility” is known as:

Options :

- 1. ✖ dielectric strength
- 2. ✔ diamagnetism
- 3. ✖ ferromagnetism
- 4. ✖ ferrimagnetism

Question Number : 62 Question Id : 231098362 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A parallel plate capacitor having an area of $6 \times 10^{-4} \text{ m}^2$ and a plate separation of $3 \times 10^{-3} \text{ m}$, across which a potential of 10 V is applied. If a material having a dielectric constant of 5 is positioned within the region between the plates, what will be the capacitance? [Permittivity of vacuum = $8.85 \times 10^{-12} \text{ F/m}$]

Options :

- 1. ✔ $8.85 \times 10^{-12} \text{ F}$

2. ✖ $17.7 \times 10^{-12} \text{ F}$

3. ✖ $26.55 \times 10^{-12} \text{ F}$

4. ✖ $35.4 \times 10^{-12} \text{ F}$

Question Number : 63 Question Id : 231098363 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3 Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

In a sand casting process, a sprue of height 200 mm and 10 mm base diameter leads to a runner which fills a cubical mould cavity of 200 mm side. Time required to fill the cavity will be: [discharge coefficient =1, $g = 10 \text{ m/s}^2$, $\pi = \frac{22}{7}$]

Options :

1. ✔ $\frac{560}{11} \text{ sec}$

2. ✖ $\frac{460}{11} \text{ sec}$

3. ✖ $\frac{360}{11} \text{ sec}$

4. ✖ $\frac{260}{11} \text{ sec}$

Question Number : 64 Question Id : 231098364 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3 Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

In a rolling operation, the thickness of a rectangular piece is reduced from t_1 to t_2 . The radius of both the rolls are equal to R . The angle of bite (θ) will be given by:

Options :

1. ✔ $\theta = \cos^{-1} \left[1 - \frac{t_1 - t_2}{2R} \right]$

2. ✖ $\theta = \cos^{-1} \left[\frac{t_1 - t_2}{2R} \right]$

3. ✖ $\theta = \cos^{-1} \left[1 - \frac{2R}{t_1 - t_2} \right]$

4. ✖ $\theta = \cos^{-1} \left[\frac{2R}{t_1 - t_2} \right]$

Question Number : 65 Question Id : 231098365 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

“Two working rolls of small diameter and four or more back up rolls of large diameter” are provided on:

Options :

1. ✖ three-high rolling mill

2. ✖ two-high rolling mill

3. ✖ four-high rolling mill

4. ✔ cluster mill

Question Number : 66 Question Id : 231098366 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which of the following is NOT the smith forging operation?

Options :

1. ✖ Upsetting

2. ✖ Bending

3. ✖ Setting down

4. ✔ Casting

Question Number : 67 Question Id : 231098367 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0.66

“A process of pushing the heated billet or slug of metal through an orifice provided into a die” is known as:

Options :

- 1. ✓ extrusion
- 2. ✗ deep drawing
- 3. ✗ piercing
- 4. ✗ rolling

Question Number : 68 Question Id : 231098368 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0.66

A process of making cup-shaped parts from sheet metal blanks with the help of punch is known as:

Options :

- 1. ✓ deep drawing
- 2. ✗ extrusion
- 3. ✗ piercing
- 4. ✗ upsetting

Question Number : 69 Question Id : 231098369 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0.66

“Hems and seams” are related to:

Options :

- 1. ✓ sheet metal

2. ✖ casting

3. ✖ alloying

4. ✖ heat treatment

Question Number : 70 Question Id : 231098370 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Percussion welding is a type of:

Options :

1. ✖ gas welding

2. ✖ arc welding

3. ✔ resistance welding

4. ✖ solid state welding

Question Number : 71 Question Id : 231098371 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Carburising flame is characterised by:

Options :

1. ✔ supply of acetylene is in excess as compared to oxygen and this flame has three zones

2. ✖ supply of acetylene is in excess as compared to oxygen and this flame has two zones

3. ✖ supply of oxygen is in excess as compared to acetylene and this flame has two zones

4. ✖ supply of oxygen is in excess as compared to acetylene and this flame has three zones

Question Number : 72 Question Id : 231098372 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which of the following is NOT an Arc welding?

Options :

1. ✖ MIG

2. ✖ TIG

3. ✖ Atomic hydrogen welding

4. ✔ Projection welding

Question Number : 73 Question Id : 231098373 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Solder is an alloy of:

Options :

1. ✖ tin and carbon

2. ✔ tin and lead

3. ✖ lead and steel

4. ✖ copper and steel

Question Number : 74 Question Id : 231098374 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

In a triple start thread, which of the following is true?

[L = Lead, P = Pitch]

Options :

1. ✖ $L = P$

2. ✖ $3L = P$

3. ✔ $L = 3P$

4. ✖ $L = 3 + P$

Question Number : 75 Question Id : 231098375 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The thread angle of ACME thread is:

Options :

1. ✖ 10°

2. ✖ 19°

3. ✔ 29°

4. ✖ 39°

Question Number : 76 Question Id : 231098376 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

For a given amount of heat transfer rate during steady state one-dimensional heat conduction through a plane wall — with constant thermal conductivity and no internal heat generation — the higher the value of thermal conductivity of the wall, the temperature gradient within the wall will be:

Options :

1. ✖ higher

2. ✔ lower

3. ✖ same

4. ✖ dependent on ambient conditions

Question Number : 77 Question Id : 231098377 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The Grashof number is defined as:

Options :

1. ✖ $\frac{\text{viscous force}}{\text{buoyancy force}}$

2. ✖ $\frac{\text{buoyancy force}}{\text{inertia force}}$

3. ✔ $\frac{\text{buoyancy force}}{\text{viscous force}}$

4. ✖ $\frac{\text{inertia force}}{\text{buoyancy force}}$

Question Number : 78 Question Id : 231098378 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The sensible heat factor is the ratio of:

Options :

1. ✖ sensible heat and latent heat

2. ✖ latent heat and sensible heat

3. ✔ sensible heat and total heat

4. ✖ latent heat and total heat

Question Number : 79 Question Id : 231098379 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The convection heat transfer is a combination of:

Options :

1. ✖ conduction and radiation

2. ✔ conduction and advection

3. ✖ conduction and work transfer

4. ✖ advection and work transfer

Question Number : 80 Question Id : 231098380 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Nusselt number may be characterised as:

Options :

1. ✖ the temperature (dimensional) gradient at the surface

2. ✔ the dimensionless temperature gradient at the surface

3. ✖ the ratio of the convective to the conductive resistance

4. ✖ the ratio of the rate of heat transfer due to convection to the rate of the store of the energy

Question Number : 81 Question Id : 231098381 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The back surface of a plate is heated at the rate of 50 W/m^2 and the front surface is cooled by air flow at 30°C . It is given that the heat transfer coefficient between the air and the plate surface is $50 \text{ W/m}^2 - \text{K}$. Considering steady state heat transfer, what is the temperature (in $^\circ\text{C}$) of the front surface of the plate.

Options :

1. ✖ 21

2. ✔ 31

3. ✖ 41

4. ✖ 51

Question Number : 82 Question Id : 231098382 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3 Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A carnot-refrigerator has a COP of 6. What is the ratio of the lower to the higher absolute temperature?

Options :

1. ✖ 1/6

2. ✖ 7/8

3. ✔ 6/7

4. ✖ 1/7

Question Number : 83 Question Id : 231098383 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3 Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A wall of thickness 0.6 m and thermal conductivity 0.6 W/m-K has a surface area of 1 m² . If the inner and outer temperatures of the wall are 1840⁰ C and 340⁰ C, respectively, the rate of heat transfer will be:

Options :

1. ✖ 150 W

2. ✖ 75 W

3. ✖ 750 W

4. ✔ 1500 W

Question Number : 84 Question Id : 231098384 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The formula for R134a refrigerant is:

Options :

1. ✖ CHClF_2

2. ✖ $\text{C}_2\text{Cl}_3\text{F}_3$

3. ✖ $\text{C}_2\text{Cl}_2\text{F}_4$

4. ✔ $\text{C}_2\text{H}_2\text{F}_4$

Question Number : 85 Question Id : 231098385 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

If a shaft diameter d is subjected to bending moment M , the bending stress (σ_b) induced in the shaft is given by:

Options :

1. ✔ $\sigma_b = \left(\frac{32 M}{\pi d^3} \right)$

2. ✖ $\sigma_b = \left(\frac{16 M}{\pi d^3} \right)$

3. ✖ $\sigma_b = \left(\frac{32 M}{\pi d^2} \right)$

4. ✖ $\sigma_b = \left(\frac{64 M}{\pi d^4} \right)$

Question Number : 86 Question Id : 231098386 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which of the following is true with regard to self-locking screw?

Options :

1. ✔ The friction angle is equal to or greater than the Lead angle.

2. ✖ The friction angle is less than the Lead angle.

3. ✖ The friction angle is half of the Lead angle.

4. ✖ The friction angle is $1/3^{\text{rd}}$ of the Lead angle.

Question Number : 87 Question Id : 231098387 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which of the following failure theories is suitable for brittle material?

Options :

1. ✖ Maximum Normal Strain Theory

2. ✖ Maximum Shear Stress Theory

3. ✖ Maximum Strain Energy Theory

4. ✔ Maximum Normal Stress Theory

Question Number : 88 Question Id : 231098388 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

In case of a sliding contact bearing , the bearing characteristic number is given by

(where, Z = Viscosity, N = Speed, P = Pressure):

Options :

1. ✖ $\frac{Z P}{N}$

2. ✔ $\frac{Z N}{P}$

3. ✖ $\frac{Z}{N P}$

4. ✖ $\frac{P}{Z N}$

Question Number : 89 Question Id : 231098389 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The failure of a key is due to:

Options :

1. ✔ Shearing

2. ✖ Tension

3. ✖ bending

4. ✖ twisting

Question Number : 90 Question Id : 231098390 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The specific stiffness is defined as a ratio of:

Options :

1. ✖ $\frac{\text{mass}}{\text{Young's Modulus}}$

2. ✖ $\frac{\text{Density}}{\text{Young's Modulus}}$

3. ✔ $\frac{\text{Young's Modulus}}{\text{Density}}$

4. ✖ $\frac{\text{Young's Modulus}}{\text{mass}}$

Question Number : 91 Question Id : 231098391 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3 Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

In a helical coil spring, if C is the spring index, then the shear stress correction factor is given by:-

Options :

1. ✖ $K_s = \frac{1}{2C}$

2. ✖ $K_s = \frac{2C}{2C+1}$

3. ✔ $K_s = \frac{2C+1}{2C}$

4. ✖ $K_s = \frac{C+1}{2C}$

Question Number : 92 Question Id : 231098392 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3 Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

In case of low or medium strength carbon steel, the rough estimate of ultimate tensile strength (S_{ut} in MPa) can be obtained from Brinell Hardness number (HB) as:

Options :

1. ✓ $S_{ut} \approx (3.43 \text{ to } 3.47) * HB$

2. ✗ $S_{ut} \approx (1.5 \text{ to } 2.0) * HB$

3. ✗ $S_{ut} \approx (0.5 \text{ to } 0.9) * HB$

4. ✗ $S_{ut} \approx (30 \text{ to } 37) * HB$

Question Number : 93 Question Id : 231098393 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The _____ coupling requires accurate alignment of input and output shafts.

Options :

1. ✗ flexible disk

2. ✓ rigid

3. ✗ helical

4. ✗ bush pin

Question Number : 94 Question Id : 231098394 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A component is subjected to varying tensile stresses such that maximum stress = 50 MPa and minimum stress = 10 MPa. It is made of the material having yield stress = 300 MPa and endurance stress = 100 MPa. According to the Soderberg criteria, the factor of safety will be:

Options :

1. ✗ 2

2. ✗ 2.5

3. ✓ 3.33

4. ✗ 4

Question Number : 95 Question Id : 231098395 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3 Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

For the given material, if the stress concentration factor is 2 and Notch sensitivity is 0.1, then the fatigue stress concentration factor is:

Options :

1. ✗ 1.0

2. ✗ 1.2

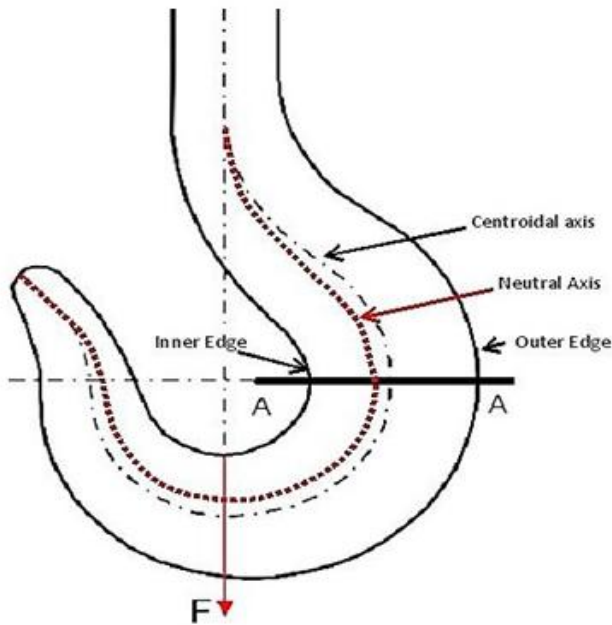
3. ✓ 1.1

4. ✗ 0.9

Question Number : 96 Question Id : 231098396 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3 Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

For a standard crane hook (as shown in figure) subjected to a constant load F , the tensile stress at a given section A-A will be maximum at ____



Options :

- 1. ✓ innermost edge
- 2. ✗ neutral axis
- 3. ✗ outermost edge
- 4. ✗ centroidal axis

Question Number : 97 Question Id : 231098397 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3 Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

If a nut, turned in clockwise direction screws on bolt, then the threads are called as

Options :

- 1. ✓ Right-handed threads
- 2. ✗ Left-handed threads
- 3. ✗ left- right hand threads
- 4. ✗ right - left hand threads

Question Number : 98 Question Id : 231098398 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3 Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

In the M20 metric screw threads, number 20 represents:

Options :

- 1. ✓ nominal diameter
- 2. ✗ minor diameter

3. ✖ Root diameter

4. ✖ effective diameter

Question Number : 99 Question Id : 231098399 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The diameter of the screw at the crests is called:

Options :

1. ✔ major diameter

2. ✖ minor diameter

3. ✖ effective diameter

4. ✖ root diameter

Question Number : 100 Question Id : 231098400 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

In a hexagonal nut, width across flats by approximate standard method is _____ (where D = nominal diameter).

Options :

1. ✖ $1.0 \times D + 3 \text{ mm}$

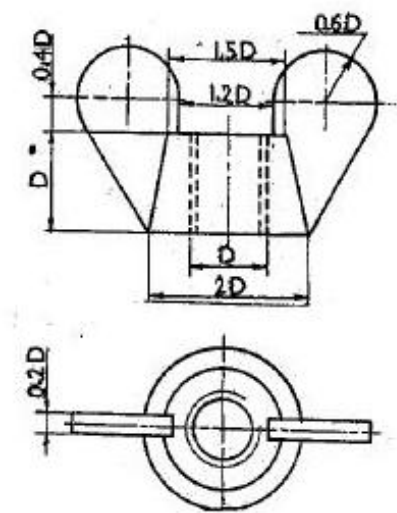
2. ✖ $2 \times D \text{ mm}$

3. ✔ $1.5 \times D + 3 \text{ mm}$

4. ✖ $4 \times D \text{ mm}$

Question Number : 101 Question Id : 231098401 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66



The figure given shows the _____ type of nut.

Options :

1. ✖ ring

2. ✔ wing

3. ✖ capstan

4. ✖ dome

Question Number : 102 Question Id : 231098402 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3 Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The _____ bolt consists of only cylindrical shank threaded at both ends.

Options :

1. ✖ hook

2. ✖ eye

3. ✔ stud

4. ✖ headless tapered

Question Number : 103 Question Id : 231098403 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which one of the foundation bolts is fixed in position by inserting a key on the face opposite to the tapered face?

Options :

1. ✖ Eye foundation bolt
2. ✖ Rang foundation bolt
3. ✔ Lewis foundation bolt
4. ✖ Cotter foundation bolt

Question Number : 104 Question Id : 231098404 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A/An _____ is used for turning a nut or for holding bolt head while the nut is being screwed on or off the bolt.

Options :

1. ✖ washer
2. ✔ spanner
3. ✖ screw
4. ✖ bolt

Question Number : 105 Question Id : 231098405 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

In dimensioning, $\varnothing 12, DEEP 20$ indicates:

Options :

1. ✔ 12 mm diameter of hole & 20 mm depth of drilled hole

2. ✖ 20 mm diameter of hole & 12 mm depth of drilled hole

3. ✖ 12 mm diameter of hole & 20 mm fillet on drilled hole

4. ✖ 20 mm diameter of hole & 12 mm fillet on drilled hole

Question Number : 106 Question Id : 231098406 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

In screw threads drawing, SQ 40 x 3 indicates:

Options :

1. ✖ metric threads with major diameter 40 mm and pitch 3 mm

2. ✖ square threads with minor diameter 40 mm and width 3 mm

3. ✔ square threads with nominal diameter 40 mm and pitch 3 mm

4. ✖ square threads with minor diameter 40 mm and pitch 3 mm

Question Number : 107 Question Id : 231098407 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A drawing that furnishes all the dimensions, limits and special finishing processes —such as heat treatment, honing, lapping, surface finish, etc. — to guide the craftsman on the shop floor in producing the component is called:

Options :

1. ✔ production drawing

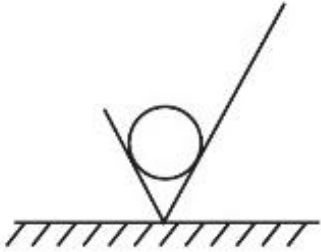
2. ✖ machine drawing

3. ✖ assembly drawing

4. ✖ design assembly drawing

Question Number : 108 Question Id : 231098408 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66



What does the given symbol represent?

Options :

- 1. ✖ Any machining method may be used
- 2. ✔ Material removal not permitted
- 3. ✖ Material removal by machining is required
- 4. ✖ Material addition is required

Question Number : 109 Question Id : 231098409 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which one of the following symbols is used to indicate square butt weld?

Options :

- 1. ✖ 
- 2. ✖ 
- 3. ✔ 

4. ✖



Question Number : 110 Question Id : 231098410 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which one of the following is NOT a rivet head?

Options :

1. ✖ Snap head

2. ✖ Pan head

3. ✔ Low head

4. ✖ High button head

Question Number : 111 Question Id : 231098411 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The degree of freedom for the following mechanism is:



Options :

1. ✔ 1

2. ✖ 0

3. ✖ 2

4. ✖ Infinite

Question Number : 112 Question Id : 231098412 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3 Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

If D = Pitch circle diameter and T = no. of teeth on gear, then the module of a spur gear is defined as:

Options :

1. ✓ $\frac{D}{T}$

2. ✗ $\frac{T}{D}$

3. ✗ $\frac{\pi D}{T}$

4. ✗ $D \times T$

Question Number : 113 Question Id : 231098413 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3 Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The smallest circle in the cam profile is:

Options :

1. ✗ prime circle

2. ✗ pitch circle

3. ✓ base circle

4. ✗ pitch curve

Question Number : 114 Question Id : 231098414 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3 Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

In case of Co-axial shafting, which of the following gear train is used?

Options :

1. ✓ Reverted gear train
2. ✗ Simple gear train
3. ✗ Compound gear train
4. ✗ Parallel gear train

Question Number : 115 Question Id : 231098415 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

From the start of engagement to the end of engagement, the pressure angle of gear, having involute profile, is:

Options :

1. ✗ Zero
2. ✗ varies linearly
3. ✗ varies exponentially
4. ✓ constant

Question Number : 116 Question Id : 231098416 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which of the following is a transmission dynamometer?

Options :

1. ✗ Rope brake dynamometer
2. ✓ Epicyclic gear train dynamometer
3. ✗ Prony Brake dynamometer

4. ✖ Heenan and Froude dynamometer

Question Number : 117 Question Id : 231098417 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

If the speed of the governor fluctuates continuously above and below the mean speed, which of the following statements is true?

Options :

- 1. ✖ Governor is said to be stable
- 2. ✖ Governor is said to be insensitive
- 3. ✖ Governor is said to be isochronous
- 4. ✔ Governor is said to be hunting

Question Number : 118 Question Id : 231098418 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The engine shaft of an aircraft rotates in counter-clockwise direction, when viewed from nose. If the aircraft is taking turn to the left, the gyroscopic couple will cause:

Options :

- 1. ✖ lowering of the nose and raising of the tail
- 2. ✖ lowering of both the nose and tail
- 3. ✖ raising of both the nose and tail
- 4. ✔ raising of the nose and lowering of the tail

Question Number : 119 Question Id : 231098419 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The epicyclic gear train has _____ degrees of freedom.

Options :

1. ✖ 1

2. ✖ 4

3. ✔ 2

4. ✖ 3

Question Number : 120 Question Id : 231098420 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The governor effort is the force applied for:

Options :

1. ✖ 10% change in speed

2. ✔ 1% change in speed

3. ✖ 50% change in speed

4. ✖ 100% change in speed

Question Number : 121 Question Id : 231098421 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The flywheel of a steam engine has a radius of gyration of 1 m and mass of 2500 kg. The starting torque of the engine is 2500 N-m. The kinetic energy of such a flywheel after 10 sec from rest position will be -

Options :

1. ✖ 120 KN-m

2. ✖ 135 KN -m

3. ✖ 130 KN-m

4. ✔ 125 KN-m

Question Number : 122 Question Id : 231098422 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

In case of a slider crank mechanism, if the mass of slider = 1 kg, crank radius = 10 cm , length of the connecting rod = 40 cm, crank speed = 100 rad/s, then the inertia force at the zero crank angle (from Inner dead center) is equal to:

Options :

1. ✔ 1250 N

2. ✖ 1050 N

3. ✖ 1750 N

4. ✖ 950 N

Question Number : 123 Question Id : 231098423 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A spur gear has a module of 3.5 mm, length of path of contact of $11\sqrt{3}$ mm and pressure angle 30° . The contact ratio of the gear will be:

Options :

1. ✖ 1.7

2. ✖ 3.0

3. ✔ 2.0

4. ✖ 1.0

Question Number : 124 Question Id : 231098424 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0.66
In a simple gear train, 1st gear (Driver) has 40 number of teeth, 2nd gear has 20 number of teeth and last gear has 80 number of teeth. The train value of the gear train is -

Options :

1. ✓ 0.5

2. ✗ 1

3. ✗ 2

4. ✗ 1.2

Question Number : 125 Question Id : 231098425 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0.66
A four-wheeler automobile is taking a turn towards left. Consider W = Weight of the vehicle, $\frac{P}{2}$ = Magnitude of the reaction due to gyroscopic effect on inner or outer wheels, $\frac{Q}{2}$ = Magnitude of the reaction due to centrifugal effect on inner or outer wheels. The total vertical reaction at each inner wheel is:

Options :

1. ✗ $\frac{W}{4} + \frac{P}{2} + \frac{Q}{2}$

2. ✗ $\frac{W}{4} + \frac{P}{2} - \frac{Q}{2}$

3. ✗ $\frac{W}{4} - \frac{P}{2} + \frac{Q}{2}$

4. ✓ $\frac{W}{4} - \frac{P}{2} - \frac{Q}{2}$

Question Number : 126 Question Id : 231098426 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0.66

Consider the following statements for different patterns.

- A. Polystyrene is a disposable pattern
- B. Wood is a non-disposable pattern
- C. Rubber is a disposable pattern
- D. Metal is a non-disposable pattern

Select the correct option from below.

Options :

- 1. ✖ Only A is correct
- 2. ✖ Both A and B are correct
- 3. ✖ Only C is correct
- 4. ✔ A, B and D are correct

Question Number : 127 Question Id : 231098427 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

In the process, the high frequency vibratory energy is used to weld the part.

Options :

- 1. ✖ thermit welding
- 2. ✖ SAW
- 3. ✖ GTAW
- 4. ✔ ultrasonic welding

Question Number : 128 Question Id : 231098428 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The manufacturer has a marking on a grinding wheel as 'A 27 K 7 V'. The code 'K' represents the:

Options :

1. ✖ structure

2. ✖ bond

3. ✔ grade

4. ✖ abrasive particle size

Question Number : 129 Question Id : 231098429 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which one of the following parameters can be measured with the help of dynamometer?

Options :

1. ✔ Forces during metal cutting

2. ✖ Toughness of cutting tool

3. ✖ Uncut chip thickness

4. ✖ Chip thickness

Question Number : 130 Question Id : 231098430 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Using Taylor's equation for tool life $VT^{0.5} = C$, what is the percentage increase in tool life when the cutting speed is halved?

Options :

1. ✖ 50%

2. ✖ 75%

3. ✖ 200%

4. ✔ 300%

Question Number : 131 Question Id : 231098431 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which one of the following joining techniques is used for joining of HSS drill bit to carbon steel shank?

Options :

1. ✖ Brazing

2. ✖ Braze welding

3. ✖ Soldering

4. ✔ Gas welding

Question Number : 132 Question Id : 231098432 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The _____ process is used to obtain high surface finish.

Options :

1. ✖ drilling

2. ✖ trepanning

3. ✔ reaming

4. ✖ Tapping

Question Number : 133 Question Id : 231098433 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The secondary shear zone during metal machining lies between:

Options :

- 1. ✓ metal chip and cutting tool
- 2. ✗ cutting tool and metal workpiece
- 3. ✗ metal workpiece and metal chip
- 4. ✗ cutting tool and metal dust

Question Number : 134 Question Id : 231098434 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

In the metal cutting operation, what will be the shear angle when a cutting tool has positive rake $\alpha = 20^\circ$. The friction angle is 40° . (Use Merchant's shear angle theory)

Options :

- 1. ✓ 35°
- 2. ✗ 30°
- 3. ✗ 90°
- 4. ✗ 40°

Question Number : 135 Question Id : 231098435 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A sphere-shaped casting solidifies in 10 min. What will be the solidification time in minutes for another sphere of the same material, which is 8 times heavier than the original casting?

Options :

- 1. ✗ 80

2. ✖ 10

3. ✔ 40

4. ✖ 20

Question Number : 136 Question Id : 231098436 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

The time required in drilling a 8 mm diameter hole through a 24 mm thick mild steel plate with a drill bit running at 360 rpm and a feed of 0.5 mm per revolution is:

(neglect the approach and over travel of drill)

Options :

1. ✔ 8 s

2. ✖ 16 s

3. ✖ 4 s

4. ✖ 0.33 s

Question Number : 137 Question Id : 231098437 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A rolling mill is used to reduce the thickness of a plate from 50 mm to 25 mm. The roll diameter is 700 mm and the coefficient of friction at the roll work interface is 0.1. It is required that the draft in each pass must be the same.

Assuming no front and back tensions, the minimum number of passes required in the rolling are:

Options :

1. ✖ 16

2. ✔ 8

3. ✖ 4

4. ✖ 12

Question Number : 138 Question Id : 231098438 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A spherical drop of molten metal of radius 5 mm was found to solidify in 12 s. In how much time will a similar drop of radius 10 mm solidify?

Options :

1. ✖ 6 s

2. ✖ 12 s

3. ✖ 24 s

4. ✔ 48 s

Question Number : 139 Question Id : 231098439 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A drill bit is positioned in absolute system at A (2.5,1.2) and it has to move to point B (12.5,24.2). In CNC program, the coordinates of B in an incremental system will be:

Options :

1. ✖ (12.5, 24.2)

2. ✖ (24.2, 1.2)

3. ✔ (10.0, 23.0)

4. ✖ (23.0, 10.0)

Question Number : 140 Question Id : 231098440 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0.66

In a CNC Program Block

N10 G02 G91 X 52 Z 25.....,

G02 represents:

Options :

- 1. ✖ linear interpolation
- 2. ✔ clockwise circular interpolation
- 3. ✖ incremental command
- 4. ✖ absolute command

Question Number : 141 Question Id : 231098441 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0.66

Which of the following is not a part of the quantitative approach for forecasting?

Options :

- 1. ✖ Moving average
- 2. ✖ Simple average
- 3. ✔ Delphi
- 4. ✖ Exponential smoothening

Question Number : 142 Question Id : 231098442 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0.66

The standardisation of products is done to:

Options :

1. ✖ reduce material cost
2. ✔ make interchangeable manufacture possible
3. ✖ simplify manufacturing process
4. ✖ eliminate unnecessary varieties in design

Question Number : 143 Question Id : 231098443 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which one of the following symbols is used to represent welding activity on an operation process chart?

Options :

1. ✖ A
2. ✖ AA
3. ✔ O
4. ✖ D

Question Number : 144 Question Id : 231098444 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

In motion study, the  Therblig symbol represents:

Options :

1. ✔ find
2. ✖ search

3. ✖ assembly

4. ✖ inspect

Question Number : 145 Question Id : 231098445 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

For event 1, the earliest occurrence time is 8 weeks and the latest occurrence time is 26 weeks. For event 2, the earliest occurrence time is 32 weeks and the latest occurrence time is 37 weeks. If the activity time is 11 weeks, the total float will be:

Options :

1. ✖ 11

2. ✖ 13

3. ✔ 18

4. ✖ 24

Question Number : 146 Question Id : 231098446 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

In the Method study, $\longrightarrow$ symbol is used for:

Options :

1. ✖ operation

2. ✔ transportation

3. ✖ delay

4. ✖ storage

Question Number : 147 Question Id : 231098447 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

A manufacturing company purchases 9000 parts of a machine for its annual requirements ordering for month usage at a time, each part costing ₹20. The ordering cost per order is ₹15 and carrying charges are 15% of the average inventory per year. What should be the optimum order quantity?

Options :

1. ✖ 200

2. ✔ 300

3. ✖ 400

4. ✖ 500

Question Number : 148 Question Id : 231098448 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

In the value analysis, the value is denoted by:

Options :

1. ✔ ratio of function to cost

2. ✖ ratio of cost to function

3. ✖ square root of ratio of cost to function

4. ✖ square root of ratio of function to cost

Question Number : 149 Question Id : 231098449 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

Which one of the following is NOT a technique of inventory control?

Options :

1. ✖ ABC analysis

2. ✖ FSN analysis

3. ✖ GOLF analysis

4. ✔ FTMN analysis

Question Number : 150 Question Id : 231098450 Question Type : MCQ Option Shuffling : Yes Negative Marks Display Text : 2/3
Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0.66

In an assembly line for assembling engine, six workers are assigned tasks that take 22, 24, 26, 27, 25 and 26 minutes respectively. The balance delay for the line is:

Options :

1. ✔ 7.4%

2. ✖ 14.8%

3. ✖ 7.0%

4. ✖ 10.3%



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