TCSiON CAE

Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name :	PC22167 MECHANICAL ENGINEERING AE2216 26th Oct 23 S2
Subject Name :	PC22167 MECHANICAL ENGINEERING AE2216
Actual Answer Key :	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console?	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

MECHANICAL ENGINEERING

Section type :	Online
Section Negative Marks :	0
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Is Section Default? :	null

Question Number : 1 Question Id : 630680426942 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The definition of specific heat at constant volume involves change of:

Options :

1. ✔ Specific internal energy

2. ✖ Specific enthalpy

3. ✖ Specific volume

4. ✖ Specific entropy

Question Number : 2 Question Id : 630680426943 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Arrange the following devices in the correct sequence as per the heat engine cycle:

A. Turbine

B. Boiler

C. Pump

D. Condenser

Options :

1. ✖ B-D-A-C

2. ✖ B-C-A-D

3. ✔ B-A-D-C

4. ✖ B-C-D-A

Question Number : 3 Question Id : 630680426944 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Read the following statements:

A. Dissipation of electrical work into internal energy or heat is irreversible.

B. The conversion of heat into electrical work of the same magnitude is not possible.

Choose the correct statement(s).

Options :

1. ✖ A only

2. ✖ B only

3. ✔ Both A and B

4. ✖ Neither A nor B

Question Number : 4 Question Id : 630680426945 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Arrange the following air standard cycles in increasing order of efficiency for the same peak pressure and work output:

A. Otto cycle

B. Diesel cycle

C. Dual Cycle

Options :

1. ✖ A, B, C

2. ✔ A, C, B

3. ✖ B, C, A

4. ✖ B, A, C

Question Number : 5 Question Id : 630680426946 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In calculation of Coefficient of Performance (COP) of heat pump cycle, the desired effect is:

Options :

1. ✖ Heat absorbed from cold body

2. ✔ Heat transfers to hot body

3. ✖ Compressor work

4. ✖ Expander work

Question Number : 6 Question Id : 630680426947 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following statements:

A. Though one point, only one reversible adiabatic process can pass.

B. It is possible to construct a perpetual motion machine of the first kind.

C. It is impossible to construct a perpetual motion machine of the second kind.

D. We can draw two reversible adiabatic lines from the same point.

Choose the correct statements.

Options :

1. ✖ B and C

2. ✖ B, C and D

3. ✔ A and C

4. ✖ A, B and C

Question Number : 7 Question Id : 630680426948 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

An ideal gas at 27°C is heated at constant pressure till the volume becomes three times. The temperature of the gas will then be:

Options :

1. ✖ 81°C

2. ✖ 900°C

3. ✔ 627°C

4. ✖ 927°C

Question Number : 8 Question Id : 630680426949 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Match the following:

Cycle	Processes
A. Carnot	1. Two constant volume and two adiabatic
B. Otto	2. Two constant pressure and two adiabatic
C. Diesel	3. Two isothermal and two adiabatic
D. Rankine	4. One constant pressure, one constant volume and two adiabatic

Choose the correct matching of cycle and process.

Options :

1. ✖ A-3, B- 4, C-1, D-2

2. ✔ A-3, B- 1, C-4, D-2

3. ✖ A-3, B- 2, C-4, D-1

4. ✖ A-2, B- 1, C-4, D-3

Question Number : 9 Question Id : 630680426950 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The chlorine-free refrigerant widely used nowadays in domestic refrigerator is _____.

Options :

1. ✖ R-12

2. ✖ R-115

3. ✖ R-22

4. ✔ R-134a

Question Number : 10 Question Id : 630680426951 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

When compared to vapour compression refrigeration, the gas cycle refrigeration system has the following feature(s).

Options :

1. ✖ Higher COP

2. ✖ Low power requirement

3. ✖ Pressurization at high altitude difficult

4. ✔ light weight and compact

Question Number : 11 Question Id : 630680426952 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the thermal efficiency of a Carnot engine is 1/5.

A. The COP of the corresponding Carnot refrigerator is 5.

B. The COP of the corresponding Carnot heat pump is 5.

Choose the correct answer.

Options :

1. ✖ A only

2. ✔ B only

3. ✖ Both A and B

4. ✖ Neither A nor B

Question Number : 12 Question Id : 630680426953 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Arrange the following devices of the refrigeration cycle in the correct sequence:

A. Evaporator

B. Expander

C. Compressor

D. Condenser

Options :

1. ✖ A-D-C-B

2. ✖ C-D-A-B

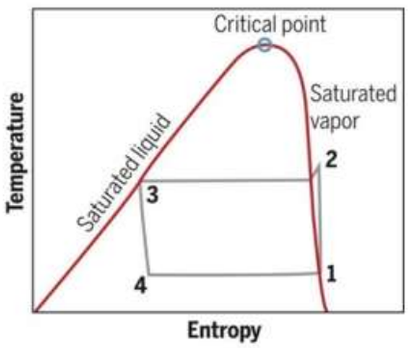
3. ✖ C-A-D-B

4. ✔ A-C-D-B

Question Number : 13 Question Id : 630680426954 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Figure shows a vapour compression cycle on a T-s diagram:



Consider the following pairs:

A. 1-2 Expansion

B. 2-3 Condensation

C. 3-4 Compression

D. 4-1 Evaporation

Choose the correct answer.

Options :

1. ✖ A and B

2. ✖ C and D

3. ✖ A and C

4. ✔ B and D

Question Number : 14 Question Id : 630680426955 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Volumetric efficiency of an engine is a measure of _____.

Options :

1. ✖ speed of the engine

2. ✖ power of the engine

3. ✖ pressure rise in the cylinder

4. ✔ breathing capacity of the engine

Question Number : 15 Question Id : 630680426956 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following gas compressors does not come in the class of positive displacement compressors?

Options :

1. ✖ Reciprocating type

2. ✔ Axial type

3. ✖ Root's blower type

4. ✖ Vane-sealed type

Question Number : 16 Question Id : 630680426957 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Read the following statements:

A. Multi-stage compression reduces leakage losses in comparison with single-stage compression and improves overall volumetric efficiency.

B. Multi-stage compression results in better mechanical balance in comparison with single-stage compression and thus smaller flywheel will be required.

Choose the correct statement.

Options :

1. ✖ A only

2. ✖ B only

3. ✔ Both A and B

4. ✖ Neither A nor B

Question Number : 17 Question Id : 630680426958 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following for internal combustion engines:

A. Indicated thermal efficiency	1. Ratio of brake power to input fuel power
B. Brake thermal efficiency	2. Ratio of brake power to indicated power
C. Mechanical Efficiency	3. Ratio of actual volume flow rate of air into the intake system to the rate at which the volume is displaced by the system
D. Volumetric efficiency	4. Ratio of thermal efficiency of an actual cycle to that of ideal cycle
	5.Ratio of indicated power to input fuel power

Match the A,B,C.D with 1,2,3,4,5 and select a right combination.

Options :

1. ✖ A-5, B-1, C-4, D-3

2. ✖ A-5, B-4, C-2, D-3

3. ✖ A-4, B-1, C-2, D-3

4. ✔ A-5, B-1, C-2, D-3

Question Number : 18 Question Id : 630680426959 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Arrange the following air standard cycles in decreasing order of efficiency for the same compression ratio and heat input:

A. Otto cycle

B. Diesel cycle

C. Dual Cycle

Options :

1. ✖ A, B, C

2. ✔ A, C, B

3. ✖ B, C, A

4. ✖ B, A, C

Question Number : 19 Question Id : 630680426960 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The work output of the turbine is much higher than the work input to the pump in steam power plant cycle mainly due to which of the following property:

Options :

1. ✖ Pressure

2. ✖ Temperature

3. ✔ Specific volume

4. ✖ Entropy

Question Number : 20 Question Id : 630680426961 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In a convergent-divergent nozzle, when the back pressure is decreased below the critical pressure, the mass flow rate:

Options :

1. ✖ decreases

2. ✖ increases

3. ✔ remains constant

4. ✖ first increases then decreases

Question Number : 21 Question Id : 630680426962 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following is the fire tube boiler?

Options :

1. ✖ Babcock & Wilcox boiler

2. ✔ Locomotive boiler

3. ✖ Stirling boiler

4. ✖ Benson boiler

Question Number : 22 Question Id : 630680426963 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following pairs for steam boilers:

A. Feed water pump : boiler accessory

B. Steam stop valve : boiler mounting

C. Super heater : boiler accessory

D. Air pre-heater : boiler mounting

Choose the correct pairs.

Options :

1. ✖ A and B

2. ✖ C and D

3. ✔ A, B and C

4. ✖ A, B and D

Question Number : 23 Question Id : 630680426964 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

An impulse turbine produces 60 kW of power when the blade mean speed is 400 m/s. The rate of change of momentum tangential to the rotor is:

Options :

1. ✖ 200 N

2. ✖ 175 N

3. ✔ 150 N

4. ✖ 125 N

Question Number : 24 Question Id : 630680426965 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Differential is used in _____ system of Automobile.

Options :

1. ✖ Braking

2. ✖ Suspension

3. ✔ Transmission

4. ✖ Cooling

Question Number : 25 Question Id : 630680426966 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The term CVT in automobiles means:

Options :

1. ✖ Constant Velocity Transmission

2. ✔ Continuously Variable Transmission

3. ✖ Critical Velocity Transmission

4. ✖ Central Variable Transmission

Question Number : 26 Question Id : 630680426967 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The most common standard firing order of four-cylinder In-line engine is:

Options :

1. ✖ 1-4-2-3

2. ✖ 1-2-3-4

3. ✔ 1-3-4-2

4. ✖ 1-3-2-4

Question Number : 27 Question Id : 630680426968 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Choose the correct statement related to Steering of an automobile.

A. Rack and Pinion steering is considered to be best for vehicle handling.

B. Power steering increases the effort required for steering.

Options :

1. ✔ Only A is correct

2. ✖ Only B is correct

3. ✖ Both A and B are correct

4. ✖ Neither A nor B is correct

Question Number : 28 Question Id : 630680426969 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Choose the correct statement/s.

A. Clutch is located Between Engine and Gear box in 4-wheeler.

B. Pneumatic brakes are called self-lubricating brakes.

C. While taking a turn the outer wheel turns more than inner wheel.

D. The risk of fire is more in Diesel Engine than petrol engine.

Options :

1. ✔ Only A

2. ✖ Both A and B

3. ✖ B, C and D

4. ✖ A and D

Question Number : 29 Question Id : 630680426970 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Match 1, 2, 3, 4 with A, B, C, D in the following table and select the correct matching combination.

1. Spark Ignition	A. Hydraulic Brakes
2. Steering	B. Petrol Engine
3. Constant Mesh gears	C. Ackermann Mechanism
4. Cars	D. Transmission

Options :

1. ✖ 1-A ; 2-B ; 3-C ; 4-D

2. ✔ 1-B ; 2-C ; 3-D ; 4-A

3. ✖ 1-C ; 2-D ; 3-B ; 4-A

4. ✖ 1-D ; 2- A ; 3-C ; 4-B

Question Number : 30 Question Id : 630680426971 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Arrange the following as per the power transmission sequence.

A. Propeller

B. Clutch

C. Gear box

D. Engine

E. Rear axle

Options :

1. ✔ D-B-C-A-E

2. ✖ D-E-C-A-B

3. ✖ D-C-B-A-E

4. ✖ D-A-C-B-E

Question Number : 31 Question Id : 630680426972 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In constant mesh gear box, _____ is/are in constant mesh with the corresponding gears on lay shaft.

Options :

1. ✖ Second gear

2. ✖ Smallest gear

3. ✖ Reverse Gear

4. ✔ All gears

Question Number : 32 Question Id : 630680426973 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Select the correct combination of operation (P, Q, R, S) and stress induced (1, 2, 3, 4) for the following metal working processes.

Operation	Stresses Induced
P. Piercing	1. Tension
Q. Stretch forming	2. Tension and Compression
R. Coining	3. Compression
S. Bending	4. Shearing

Options :

1. ✗ P-2, Q-1, R-3, S-4

2. ✗ P-3, Q-4, R-1, S-2

3. ✗ P-2, Q-4, R-3, S-1

4. ✓ P-4, Q-1, R-3, S-2

Question Number : 33 Question Id : 630680426974 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

_____ is the fabrication of metal components having intricate and precise shapes by the compaction of metal powders, followed by a densification heat treatment.

Options :

1. ✗ Casting

2. ✗ Welding

3. ✓ Powder metallurgy

4. ✗ Forming

Question Number : 34 Question Id : 630680426975 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following machines is NOT used to prepare a rectangular slot on component?

Options :

1. ✗ Shaping Machine

2. ✗ Slotting Machine

3. ✗ Planer Machine

4. ✓ Honing Machine

Question Number : 35 Question Id : 630680426976 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Arrange the processes in the decreasing order of their maximum material removal rate:

Ultrasonic machining (USM)

Laser beam machining (LBM)

Electric discharge machining (EDM)

Options :

1. ✖ LBM, USM, EDM
2. ✔ EDM, USM, LBM
3. ✖ USM, EDM, LBM
4. ✖ USM, LBM, EDM

Question Number : 36 Question Id : 630680426977 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following quantities is a vector quantity?

Options :

1. ✔ Force
2. ✖ Time
3. ✖ Volume
4. ✖ Distance

Question Number : 37 Question Id : 630680426978 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In case of simple lifting machines, Mechanical Advantage (MA) is defined as _____

Take, W = load, P = Effort, x = displacement of load and y = displacement of effort

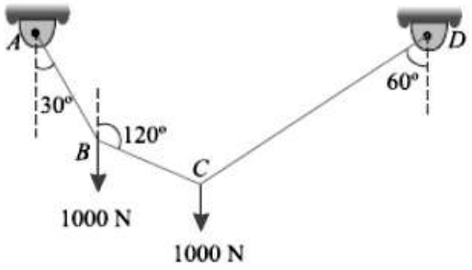
Options :

1. ✔ $MA = \frac{W}{P}$
2. ✖ $MA = \frac{P}{w}$
3. ✖ $MA = \frac{y}{x}$
4. ✖ $MA = \frac{x}{y}$

Question Number : 38 Question Id : 630680426979 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For the arrangement shown in following figure, the relation between tension developed in string AB, BC and CD is:



Options :

1. ✔ Tension in AB is greater than Tensions in BC and CD.

2. ✖ Tension in AB is less than tension in BC but greater than tension in CD.

3. ✖ Tension in AB is less than both tensions in BC and CD.

4. ✖ Tension in AB is less than tension in CD but greater than tension in BC.

Question Number : 39 Question Id : 630680426980 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Choose the correct statement from the following:

A. The resultant force of the forces producing couple is zero.

B. A single force can balance the couple.

Options :

1. ✔ Only A

2. ✖ Only B

3. ✖ Both A and B

4. ✖ Neither A nor B

Question Number : 40 Question Id : 630680426981 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Choose the correct statements from the following:

A. Coefficient of static friction is less than the coefficient of rolling friction.

B. Frictional force is normal to the surface on which the body is resting upon.

C. Frictional force is independent of contact area of surface.

D. Limiting friction is the friction at which body is about to move.

Options :

1. ✖ A and B are correct

2. ✖ A, B and C are correct

3. ✖ A, C and D are correct

4. ✔ C and D are correct

Question Number : 41 Question Id : 630680426982 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Match A, B, C, D with 1, 2, 3, 4 in the following table and select the right combination of answers.

A. Lame's theorem	1. Area
B. Rolling body	2. Concurrent forces
C. Centroid	3. Vector quantity
D. Momentum	4. Dynamics friction

Options :

1. ✖ A-2; B-3; C-1; D-4

2. ✔ A-2; B-4; C-1; D-3

3. ✖ A-3; B-2; C-1; D-4

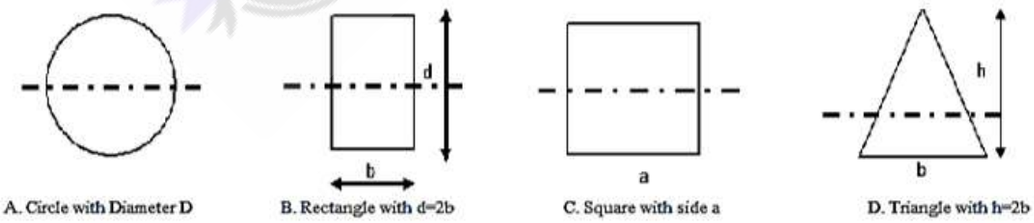
4. ✖ A-4; B-3; C-1; D-2

Question Number : 42 Question Id : 630680426983 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For the same area, arrange the moment of inertia about horizontal axis (as shown) in ascending order.

Circle with diameter D, Rectangle with depth = 2 times width, Square with side a, Triangle with height = 2 times base



A. Circle with Diameter D B. Rectangle with d=2b C. Square with side a D. Triangle with h=2b

Options :

1. ✔ A-C-B-D

2. ✖ A-B-C-D

3. ✖ A-C-D-B

4. ✖ A-D-C-B

Question Number : 43 Question Id : 630680426984 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If 'P' is applied force and 'F' is frictional force, arrange the following conditions in a sequence, from the moment the body is at rest, till it starts moving:

A. P<F

B. P>F

C. P=F

D. P=0

Options :

1. ✖ A-B-C-D

2. ✖ A-C-B-D

3. ✔ D-A-C-B

4. ✖ D-C-B-A

Question Number : 44 Question Id : 630680426985 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the vehicle of mass 'm' is moving over circular track of radius 'R' with linear velocity 'V', then centrifugal acceleration of vehicle is _____.

Options :

1. ✖ V*R

2. ✖ $\frac{V}{R}$

3. ✔ $\frac{V^2}{R}$

4. ✖ $\frac{R^2}{V}$

Question Number : 45 Question Id : 630680426986 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If a stone is released from the top of 50m high tower, then its velocity just before touching the ground will be _____ m/s.

Take g = gravitational acceleration

Options :

1. ✖ 10

2. ✔ $10\sqrt{g}$

3. ✖ 100

4. ✖ $\sqrt{g}$

Question Number : 46 Question Id : 630680426987 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

An elevator is lifting a man of mass 50 kg. The acceleration of the elevator, which could cause a force of 800 N on the floor is _____ m/s^2.

Take g = 10 m/s^2

Options :

1. ✖ 16.0

2. ✔ 6.0

3. ✖ 1.6

4. ✖ 0.6

Question Number : 47 Question Id : 630680426988 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Choose the correct statement from the following:

A. Superelevation is independent of mass of the vehicle.

B. If the angle of banking is 15 deg, superelevation of road increases with velocity of vehicle.

Options :

1. ✔ Only A

2. ✖ Only B

3. ✖ Both A and B

4. ✖ Neither A nor B

Question Number : 48 Question Id : 630680426989 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Match 1, 2, 3, 4 with A, B, C, D and select the right combination:

1. Momentum conservation	A. Centripetal acceleration
2. Banking of road	B. Impulse Pile hammer
3. Motion under gravity	C. Coeff. Of restitution
4. Impulse	D. free fall of body

Options :

1. ✔ 1-C; 2-A; 3-D; 4-B

2. ✖ 1-A; 2-B; 3-C; 4-D

3. ✖ 1-B; 2-D; 3-C; 4-A

4. ✖ 1-D; 2-A; 3-B; 4-C

Question Number : 49 Question Id : 630680426990 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A bar of copper and steel form a composite system. The coefficient of thermal expansion of copper is more than steel. If this composite bar is heated to a temperature of 40 °C from room temperature, then the type of stress induced in the copper bar is _____.

Options :

1. ✖ Tensile

2. ✔ Compressive

3. ✖ Shear

4. ✖ Tensile and compressive

Question Number : 50 Question Id : 630680426991 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Relationship between the elastic constants E, G, K.

Options :

1. ✔ E=9KG/(3K+G)

2. ✖ E=3KG/(3K+G)

3. ✖ E=KG/(K+G)

4. ✖ E=2KG/(3K+G)

Question Number : 51 Question Id : 630680426992 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A 500 mm long circular rod with cross-sectional area of 200 mm^2 is observed an increase in length by 0.3 mm, when subjected to 12 KN load. What is modulus of elasticity of the rod material?

Options :

1. ✖ 90 GPa

2. ✔ 100 GPa

3. ✖ 110 GPa

4. ✖ 120 GPa

Question Number : 52 Question Id : 630680426993 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A thin wall cylinder is having internal diameter 'D' and thickness 't'. If it is subjected to internal pressure 'p', then the ratio of Hoop stress to maximum shear stress is:

Options :

1. ✖ 2

2. ✔ 4

3. ✖ 6

4. ✖ 8

Question Number : 53 Question Id : 630680426994 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Select the correct statements from following:

A. Beam of uniform strength is constant in cross section.

B. Area under the stress strain curve represents Hardness.

Options :

1. ✖ Only A

2. ✖ Only B

3. ✖ Both A and B

4. ✔ Neither A nor B

Question Number : 54 Question Id : 630680426995 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Choose the correct statements from following:

A. Shear force and Bending moment diagrams are always symmetric.

B. For a simply supported beam with point load at center, the maximum deflection is at center of beam length

C. If the area of Cross section is same then rectangular section is stronger than circular section in bending

D. Modulus of Elasticity is always greater than modulus of rigidity

Options :

1. ✖ A, B and C

2. ✔ B, C and D

3. ✖ A and D

4. ✖ B and C

Question Number : 55 Question Id : 630680426996 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Arrange the calculations required for drawing of Shear Force Diagram (SFD) and Bending Moment Diagram (BMD) in chronological order.

A. Draw BMD

B. Draw SFD

C. Calculate support reaction.

D. Calculate the location of maximum BM.

Options :

1. ✖ A-B-C-D

2. ✖ B-C-A-D

3. ✔ C-B-D-A

4. ✖ D-C-B-A

Question Number : 56 Question Id : 630680426997 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Read the following statements.

A. Gauges that are used for gauging holes are known as plug gauges.

B. Limit gauges ensure that the components lie within the permissible limits.

Choose Correct Answer.

Options :

1. ✖ Only A

2. ✖ Only B

3. ✔ Both A and B

4. ✖ Neither A nor B

Question Number : 57 Question Id : 630680426998 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Arrange the tolerance of hole of basic size 30 in the increasing order:

A) $Hole = 30^{+0.1}_{-0.1}$

B) $Hole = 30^{+0.01}_{-0.01}$

C) $Hole = 30^{+0.3}_{+0.0}$

D) $Hole = 30^{+0.2}_{-0.2}$

Options :

1. ✔ BACD

2. ✖ ABCD

3. ✖ DCAB

4. ✖ DCBA

Question Number : 58 Question Id : 630680426999 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Considering the following statements for surface roughness symbol and its corresponding Ra value.

A)	▽	: Indicates 25 Microns roughness value (Ra)
B)	▽▽	: Indicates 3.2 Microns roughness value (Ra)
C)	▽▽▽	: Indicates 0.4 Microns roughness value (Ra)
D)	▽▽▽▽	: Indicates 0.025 Microns roughness value (Ra)

Choose the correct answer

Options :

1. ✖ A, B and C Only

2. ✖ B, C and D Only

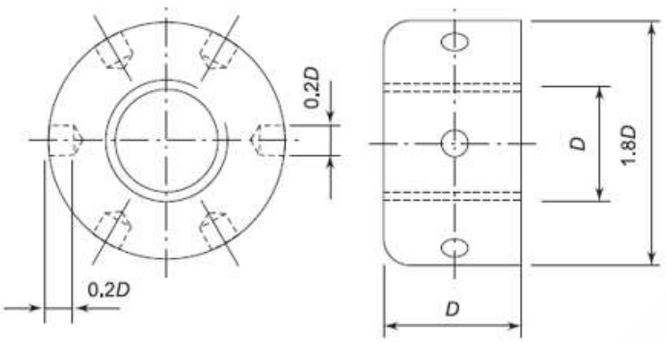
3. ✖ C and D Only

4. ✔ A, B , C, D

Question Number : 59 Question Id : 630680427000 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Figure Shows _____ type of Nut



Options :

1. ✔ Capstan Nut

2. ✖ Castle Nut

3. ✖ Wing Nut

4. ✖ Ring Nut

Question Number : 60 Question Id : 630680427001 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

_____ consists of cylindrical shank with threads cut on both the ends.

Options :

1. ✖ Hexagonal Bolt

2. ✖ Eye Bolt

3. ✖ Hook Bolt

4. ✔ Stud Bolt

Question Number : 61 Question Id : 630680427002 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which phenomenon is used in the measurement of hardness?

Options :

1. ✔ Indentation

2. ✖ Elongation

3. ✖ Tension

4. ✖ Compression

Question Number : 62 Question Id : 630680427003 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following tests is NOT used for hardness test?

Options :

1. ✖ Scratch test

2. ✖ Brinell hardness test

3. ✖ Rockwell hardness test

4. ✔ Izod test

Question Number : 63 Question Id : 630680427004 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The reaction that on heating one solid phase yields another solid phase together with one liquid phase is termed as:

Options :

1. ✔ peritectic

2. ✖ eutectic

3. ✖ eutectoid

4. ✖ peritectoid

Question Number : 64 Question Id : 630680427005 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

During cooling, the complete transformation of austenite takes place from liquid state:

Options :

1. ✖ at 723°C

2. ✖ just above 723°C

3. ✔ just below 723°C

4. ✖ At 1130°C

Question Number : 65 Question Id : 630680427006 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Read the following statements.

A) Hardenability of steel is assessed by Jominy end-quench test.

B) Annealing temperature is same as normalizing temperature.

Choose the correct answer.

Options :

1. ✔ A only

2. ✖ B only

3. ✖ Both A and B

4. ✖ Neither A nor B

Question Number : 66 Question Id : 630680427007 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Certain activities are mentioned below with respect to Time Temperature Transformation (TTT) diagram. Which of the following orders of activities is correct?

A) Soak the sample for sufficient time so as to obtain homogenous austenite.

B) Heat large number of steel pieces of a size suitable for metallography in austenitic region.

C) Keep all samples quickly into a salt bath kept in another furnace at constant temperature.

D) Remove the all sample one by one at fixed interval of time and quench in brine.

E) Study the samples metallographically and find out start time and end time of transformation.

Options :

1. ✖ ABCDE

2. ✔ BACDE

3. ✖ CDBEA

4. ✖ CDABE

Question Number : 67 Question Id : 630680427008 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Minor losses through valves, fittings, bends, contractions, and the like are commonly modeled as proportional to _____.

Options :

1. ✖ total head

2. ✖ static head

3. ✔ velocity head

4. ✖ pressure drop

Question Number : 68 Question Id : 630680427009 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The heads used in Bernoulli's equation represent:

Options :

1. ✖ Energy per unit mass

2. ✔ Energy per unit weight

3. ✖ Energy per unit volume

4. ✖ Energy per unit flow length

Question Number : 69 Question Id : 630680427010 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A differential mercury manometer of a Venturimeter shows a reading of 15 cm when placed at an angle of 45° to the horizontal. If the Venturimeter is used in horizontal position, the manometer reading will be:

Options :

1. ✖ Zero

2. ✖ $\frac{15}{\sqrt{2}}$ cm

3. ✔ 15 cm

4. ✖ $15\sqrt{2}$ cm

Question Number : 70 Question Id : 630680427011 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Read the following statements:

A. U-tube differential manometer contains a fluid whose density is lower than the density of fluid whose pressure is to be measured.

B. U-tube inverted manometer contains a fluid whose density is higher than the density of fluid whose pressure is to be measured.

Choose the correct statement(s):

Options :

1. ✖ A only

2. ✖ B only

3. ✖ Both A and B

4. ✔ Neither A nor B

Question Number : 71 Question Id : 630680427012 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following pair of Losses and the Formula given against it in the table below.

Losses	Formula
A. Major losses	$\frac{fLV^2}{2gD}$
B. Entry loss	$\frac{V^2}{2g}$
C. Exit Loss	$0.5\frac{V^2}{2g}$
D. Losses in fittings	$K\frac{V^2}{2g}$

Choose the correct answer:

Options :

1. ✖ A only

2. ✖ D only

3. ✔ A and D only

4. ✖ A, B, C, D

Question Number : 72 Question Id : 630680427013 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A jet of water 10 mm^2 in area strikes normal to a plate at a velocity of 10 m/s. If the density of water is 1000 kg/m^3 . Find the force on the plate due to the jet.

Options :

1. ✗ 100 N

2. ✗ 10 N

3. ✓ 1 N

4. ✗ 0.1 N

Question Number : 73 Question Id : 630680427014 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Power developed by a Pelton wheel is maximum if _____.

Options :

1. ✗ jet velocity is equal to half of bucket velocity.

2. ✗ jet velocity is equal to bucket velocity.

3. ✓ jet velocity is equal to twice of bucket velocity.

4. ✗ jet velocity is equal to four times of bucket velocity.

Question Number : 74 Question Id : 630680427015 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Kaplan turbine is suitable for _____.

Options :

1. ✗ axial flow and the available is more than 100 m

2. ✓ axial flow and the available is less than 50 m

3. ✗ radial flow and the available is less than 50 m

4. ✗ mixed flow and the available is less than 50 m

Question Number : 75 Question Id : 630680427016 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Arrange the following types of centrifugal pumps in the decreasing order of specific speed:

A. Radial Flow

B. Mixed Flow

C. Axial Flow

Options :

1. ✖ A, B, C

2. ✖ A, C, B

3. ✖ C, A, B

4. ✔ C, B, A

Question Number : 76 Question Id : 630680427017 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In manufacturing management, the term 'dispatching' is used to describe:

Options :

1. ✖ dispatch of sales order

2. ✖ dispatch of factor mail

3. ✖ dispatch of finished product to the user

4. ✔ dispatch of work orders through shop floor

Question Number : 77 Question Id : 630680427018 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is objective of the production management?

Options :

1. ✔ To produce goods services of right quality and quantity at the right time and right manufacturing cost

2. ✖ To do plant layout

3. ✖ To perform machining operations

4. ✖ To ensure good quality only

Question Number : 78 Question Id : 630680427019 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

_____ deals with decision making related to production processes so that the resulting goods or services are produced according to specifications, in the amount and by the schedule demanded and out of minimum cost.

Options :

1. ✖ Production

2. ✔ Production Management

3. ✖ Product Design

4. ✖ Plant Layout

Question Number : 79 Question Id : 630680427020 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Product development translates the needs of customers given by _____ into technical specifications and designing the various features into the product to these specifications.

Options :

1. ✔ Marketing

2. ✖ Sales

3. ✖ Forecast

4. ✖ Depreciation

Question Number : 80 Question Id : 630680427021 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Considering the following statements.

A) In Method study, => symbol is used for transportation

B) Operation Process chart is used for micro-motion study

C) In Method Study, D means Delay

D) In Method Study, O means Inspection

Choose the correct answer.

Options :

1. ✔ A, B and C Only

2. ✖ B, C and D Only

3. ✖ C and D Only

4. ✖ A, B , C, D

Question Number : 81 Question Id : 630680427022 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Match the correct combination for following item and head to which charged.

Item	Head to which charged
P. Factory rent	1. Administrative Overheads
Q. Telephone, Internet & Postal charges	2. Selling Expenses
R. Printing Catalogue	3. Factory Overhead

Options :

1. ✖ P-2, Q-1, R-3

2. ✖ P-3, Q-2, R-1

3. ✖ P-1, Q-2, R-3

4. ✔ P-3, Q-1, R-2

Question Number : 82 Question Id : 630680427023 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following pair of Depreciation Method and the Definition given against it in the table below.

Depreciation Method	Definition
P. Straight Line Method	A depreciation fund is equal to the actual loss in the value of asset or machine is estimated taking into account the interest on accumulated fund.
Q. Sinking Fund Method	Covers the risk, if machine became unserviceable before its estimated life.
R. Annuity Charge Method	Interest is charged on cost of machine every year on book value but rate of depreciation is constant every year.
S. Insurance Policy Method	Every year same amount is deducted and no consideration on is made about maintenance and repair.

Choose the correct answer

Options :

1. ✖ P and Q only

2. ✖ P and S Only

3. ✖ P, Q, R, S

4. ✔ R Only

Question Number : 83 Question Id : 630680427024 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following temperature scale defines absolute zero temperature?

Options :

1. ✖ Centigrade Scale

2. ✖ Celsius Scale

3. ✖ Fahrenheit Scale

4. ✔ Kelvin Scale

Question Number : 84 Question Id : 630680427025 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is correct for an isolated system?

Options :

1. ✖ Heat is transferred from an isolated system to the surroundings.

2. ✖ Work is done on the isolated system.

3. ✔ The energy of an isolated system is always constant.

4. ✖ Heat is transferred to an isolated system from the surroundings.

Question Number : 85 Question Id : 630680427026 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Read the following statements:

A. Both the Kelvin-Planck and the Clausius statements of the second law are negative statements.

B. The second law of thermodynamics is based on mathematical proofs.

Choose the correct answer:

Options :

1. ✔ A only

2. ✖ B only

3. ✖ Both A and B

4. ✖ Neither A nor B

Question Number : 86 Question Id : 630680427027 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following statements:

A. Entropy is not a physical entity.

B. The concept of entropy is required to extend the second law to non-cyclic processes.

C. Integration is involved to define entropy.

D. Entropy is non-calculable property.

Choose the correct answer:

Options :

1. ✔ A, B and C only

2. ✖ A and D only

3. ✖ B and C only

4. ✖ C and D only

Question Number : 87 Question Id : 630680427028 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Calculate the sensible heat required to raise the temperature of 1 kg water from 0°C to 40°C. Specific heat of water is 4.18 kJ/kgK.

Options :

1. ✖ 4.18 kJ

2. ✔ 167.2 kJ

3. ✖ 8.36 kJ

4. ✖ 167.2 J

Question Number : 88 Question Id : 630680427029 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In context to water put the following temperatures in increasing order (starting with minimum to maximum).

A. Triple Point

B. Critical Point

C. Boiling point

D. Freezing point (Ice point)

Options :

1. ✔ D, A, C, B

2. ✖ B, A, C, D

3. ✖ C, A, D, B

4. ✖ A, B, C, D

Question Number : 89 Question Id : 630680427030 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The heat extraction capacity of the refrigerator (working on reversed Carnot cycle) is 1090 kJ/s when operating between – 10°C and 25°C. Determine minimum power (in kW) required.

Options :

1. ✖ 290 kW

2. ✖ 72 kW

3. ✔ 145 kW

4. ✖ 1090 kW

Question Number : 90 Question Id : 630680427031 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Read the following statements:

A. The rating of a refrigeration machine is obtained by refrigerating effect or amount of heat extracted in a given time from a body.

B. Tonne of refrigeration is defined as the refrigerating effect produced by the melting of 1 tonne of ice from and at 0°C in 24 hours.

Choose the correct answer:

Options :

1. ✖ A only

2. ✖ B only

3. ✔ Both A and B

4. ✖ Neither A nor B

Question Number : 91 Question Id : 630680427032 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is correct statement for Bell-Coleman refrigeration cycle?

Options :

1. ✖ Ammonia is used as refrigerant in Bell-Coleman refrigeration cycle.

2. ✖ The weight of air refrigeration system per tonne of refrigeration is extremely high in Bell-Coleman refrigeration cycle.

3. ✖ The COP of Bell-Coleman refrigeration cycle is high in comparison to other systems.

4. ✔ In Bell-Coleman refrigeration cycle the weight of refrigerant to be circulated is more compared to refrigerants used in other systems.

Question Number : 92 Question Id : 630680427033 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is correct statement?

Options :

1. ✖ Calorific value is expressed in kJ/kg for gases.

2. ✖ The lower heating value, LHV, is obtained when the water formed by combustion exists completely in the solid phase.

3. ✔ The higher heating value, HHV, is obtained when the water formed by combustion is completely condensed.

4. ✖ Calorific value is expressed in kJ/ m^3 for solid fuels.

Question Number : 93 Question Id : 630680427034 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following pairs: (Type of fuel - Method to determine calorific value)

A. Solid fuel - Junker's calorimeter

B. Liquid fuel - Junker's calorimeter

C. Gaseous Fuel - Dulong's formula

D. Solid fuel - Bomb calorimeter

Choose the correct answer.

Options :

1. ✖ A

2. ✖ B

3. ✖ C

4. ✔ D

Question Number : 94 Question Id : 630680427035 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Read the following statements:

A. Overcooling of the I.C. engine is harmful because at very low temperature starting of the engine becomes difficult.

B. Undercooling of I. C. engine may causes engine seizure and distortion of the cylinder block.

Choose the correct answer.

Options :

1. ✗ A only

2. ✗ B only

3. ✓ Both A and B

4. ✗ Neither A nor B

Question Number : 95 Question Id : 630680427036 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following for the classification of internal combustion engines:

A. According to the method of ignition	1. Automobile engines
B. According to the valve arrangement	2. Compression ignition engine
C. According to the method of governing	3. L- head type engine
D. According to the uses	4. Quality governed engines

Choose the correct answer.

Options :

1. ✗ A-1, B-2, C-3, D-4

2. ✗ A-3, B-1, C-2, D-4

3. ✓ A-2, B-3, C-4, D-1

4. ✗ A-2, B-4, C-3, D-1

Question Number : 96 Question Id : 630680427037 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Calculate indicated power of a single stage reciprocating compressor which delivers 1.226 kg/min of air. The suction temperature of air is 288K and delivery temperature is 475.2K. Take R = 287 J/kgK and index of compression(n) is 1.35.

Options :

1. ✖ 2.1 kW

2. ✔ 4.23 kW

3. ✖ 8.46 kW

4. ✖ 1.05 kW

Question Number : 97 Question Id : 630680427038 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following statements:

A. A gas turbine does not require a flywheel.

B. Because of the low specific weight the gas turbines are suitable for use in aircrafts.

C. Gas turbine requires speed reduction device due to higher operating speeds.

D. Gas turbine is not useful for power plants.

Choose the correct answer.

Options :

1. ✔ A, B and C only

2. ✖ A and D only

3. ✖ B and C only

4. ✖ C and D only

Question Number : 98 Question Id : 630680427039 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following expression is correct for boiler efficiency?

Options :

1. ✖ boiler efficiency = 1- (the fuel power of the boiler / The sum of the major losses within the boiler)

2. ✖ boiler efficiency = The fuel power of the boiler / The sum of the major losses within the boiler

3. ✖ boiler efficiency = The sum of the major losses within the boiler/the fuel power of the boiler

4. ✔ boiler efficiency = 1- (The sum of the major losses within the boiler/the fuel power of the boiler)

Question Number : 99 Question Id : 630680427040 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statement is correct for steam boiler?

A. In water tube boilers the water tubes are directly exposed to radiation and gases from the combustion.

B. The capacity of Fire tube boiler is more than water tube boiler.

C. In fire tube boilers the water is contained in tubes.

D. In water tube boilers the water circulates in tubes.

Options :

1. ✔ A and D only

2. ✖ A, B and C only

3. ✖ A, B and D only

4. ✖ B and D

Question Number : 100 Question Id : 630680427041 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

At inlet to steam nozzle the enthalpy of fluid is 3000 kJ/kg and the velocity is 50 m/s. At the exit of the nozzle, the enthalpy is 2700 kJ/kg. The nozzle is kept horizontal and is well insulated. Find the velocity at the exit of the nozzle.

Options :

1. ✖ 1414 m/s

2. ✖ 332.5 m/s

3. ✔ 776.2 m/s

4. ✖ 912.3 m/s

Question Number : 101 Question Id : 630680427042 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Calculate stage efficiency of impulse steam turbine if the blade efficiency is 91 % and nozzle efficiency is 89 %.

Options :

1. ✖ 97.8%

2. ✔ 80.99%

3. ✖ 70.1%

4. ✖ 20.3%

Question Number : 102 Question Id : 630680427043 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following pairs for steam turbine classification:

Criteria - Steam turbine

a. Direction of flow - Radial flow turbine

b. means of heat rejection - pass out turbine

c. means of heat supply - reheated turbine

d. number of shaft - tandem compounding

Choose the correct answer.

Options :

1. ✔ a, b, c and d

2. ✖ b, c and d only

3. ✖ a, c and d only

4. ✖ b and c only

Question Number : 103 Question Id : 630680427044 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following supports the engine, wheels, car body and other component parts?

Options :

1. ✖ The engine

2. ✖ The power train

3. ✖ The steering system

4. ✔ The Frame

Question Number : 104 Question Id : 630680427045 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

As per the succession of events in the history of Automobile, which order among the following is correct?

A. Development of internal combustion engine vehicle

B. Development of crude three-wheeled steam tractor for handling canon

C. Development of practicable gas engine

D. Development of self-propelled road vehicle

Options :

1. ✖ A, B, C, D

2. ✖ B, C, A, D

3. ✔ D, B, C, A

4. ✖ C, A, B, D

Question Number : 105 Question Id : 630680427046 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is correct for the components of total resistance to the motion of the vehicle?

Options :

1. ✔ Air Resistance is the aerodynamic drag experienced by the vehicle while moving.

2. ✖ Rolling Resistance depends upon the weight of the vehicle and the steepness.

3. ✖ Gradient Resistance is the resistance to rolling motion offered by the road over which the vehicle is moving.

4. ✖ The inflation pressure of the tyre does not affect Rolling Resistance.

Question Number : 106 Question Id : 630680427047 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following metal joining process uses a non-ferrous alloy in the liquid state between the pieces to be joined?

Options :

1. ✔ Brazing

2. ✖ Coupling

3. ✖ Riveting

4. ✖ Bolting

Question Number : 107 Question Id : 630680427048 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Read the following statements in context to Powder metallurgy:

A. Diamond impregnated tools for cutting porcelain, glass and tungsten carbides are made possible by powder metallurgy.

B. A few metals cannot be compressed because they have a tendency to cold-weld to the walls of the die causing wear on the die.

Choose the correct answer.

Options :

1. ✖ A only

2. ✖ B only

3. ✔ Both A and B

4. ✖ Neither A nor B

Question Number : 108 Question Id : 630680427049 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

How is radial drilling machine specified?

Options :

1. ✖ Maximum diameter of drill which can be held.

2. ✖ The drilling area, the size and number of holes a machine can drill.

3. ✖ Area of the table.

4. ✔ The length of the arm and column diameter.

Question Number : 109 Question Id : 630680427050 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is correct for jigs and fixtures?

Options :

1. ✖ Fixtures are used on drilling, reaming, tapping and counterboring operations.

2. ✖ Jigs are related to specific machine tools.

3. ✖ Fixtures are connected with operations.

4. ✔ Jigs are lighter than fixtures.

Question Number : 110 Question Id : 630680427051 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is a scalar quantity?

Options :

1. ✖ Force

2. ✖ displacement

3. ✖ velocity

4. ✔ density

Question Number : 111 Question Id : 630680427052 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following represent(s) correct pair:

A. Varignon 's Principle - Law of Moments

B. LAMI'S THEOREM - Three coplanar forces

C. Parallelogram law of forces - four forces, acting simultaneously on a particle

D. Polygon law of forces - two forces, acting simultaneously on a particle

Options :

1. ✔ A and B only

2. ✖ B, C and D only

3. ✖ C and D only

4. ✖ A and C only

Question Number : 112 Question Id : 630680427053 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

An isosceles triangular section has width at base 40 mm and height 30 mm. Calculate the moment of inertia of the section about the axis passing through centre of gravity of the section.

Options :

1. ✔ 30000 mm^4

2. ✖ 90000 mm^4

3. ✖ 10000 mm^4

4. ✖ 50000 mm^4

Question Number : 113 Question Id : 630680427054 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If a lifting machine has mechanical advantage 30 and velocity ratio 90, find the efficiency of the machine.

Options :

1. ✔ 33%

2. ✖ 40 %

3. ✖ 100 %

4. ✖ 66 %

Question Number : 114 Question Id : 630680427055 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is/are required to determine the effects of a force, acting on a body?

A. Magnitude of the force.

B. The direction of the line, along which the force acts.

C. Nature of the force (i.e., whether the force is push or pull).

D. The point at which (or through which) the force acts on the body.

Options :

1. ✖ A and D only

2. ✖ A, B and C only

3. ✔ A, B, C and D

4. ✖ B and D

Question Number : 115 Question Id : 630680427056 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Arrange the following in chronological order:

A. Sir Issac Newton introduced the concept of force and mass.

B. Thomas Bradwardene of Oxford University did work on plane motion of bodies.

C. Galileo established the theory of projectiles.

D. Leonarodo Da Vinci worked on motion of bodies on inclined planes.

Options :

1. ✖ A, B, C, D

2. ✔ B, D, C, A

3. ✖ C, D, A, B

4. ✖ D, A, C, B

Question Number : 116 Question Id : 630680427057 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Read the following statements:

A. Potential energy is a vector quantity.

B. Power is vector quantity.

Choose the correct answer.

Options :

1. ✖ A only

2. ✖ B only

3. ✖ Both A and B

4. ✔ Neither A nor B

Question Number : 117 Question Id : 630680427058 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

As per the succession of events in the history of Mechanics, which order among the following is correct?

A. The subject of Mechanics was termed as Newtonian Mechanics.

B. Sir Issac Newton gave Laws of Motion.

C. John Bernoulli enunciated the principle of virtual work.

D. Mechanics coupled with theory of machines and strength of materials.

Options :

1. ✖ A, B, C, D

2. ✔ B, C, A, D

3. ✖ D, B, C, A

4. ✖ C, A, B, D

Question Number : 118 Question Id : 630680427059 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A ball is attached to the end of a 2m long string. The ball is rotated with 10 rad/s of angular velocity. Find the mass of the ball if the tension in the string is limited to 25 N.

Options :

1. ✖ 1 kg

2. ✖ 0.5kg

3. ✖ 0.25kg

4. ✔ 0.125kg

Question Number : 119 Question Id : 630680427060 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A body is undergoing simple harmonic motion with an amplitude of 50 mm and frequency of 4 vibrations/sec, determine the maximum velocity and acceleration.

Options :

1. ✖ 1.256 m/s, 15.77/s^2

2. ✔ 1.256 m/s, 31.55 m/s^2

3. ✖ 0.628 m/s, 31.55 m/s^2

4. ✖ 2.512 m/s, 31.55 m/s^2

Question Number : 120 Question Id : 630680427061 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following statements:

A. The maximum displacement of a body moving with simple harmonic motion from its mean position is called oscillation.

B. The frequency of vibration in case of simple harmonic motion is the number of cycles per second.

C. The maximum acceleration of a particle moving with S.H.M. takes place, when it passes through its extreme positions.

D. The velocity of a particle moving with simple harmonic motion is maximum when its acceleration is zero.

Choose the correct answer.

Options :

1. ✖ A and D only

2. ✖ A, B and C only

3. ✖ A, B, C and D

4. ✔ B, C and D

Question Number : 121 Question Id : 630680427062 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is correct for stress strain diagram?

Options :

1. ✔ Hooke's law is applicable upto proportional limit.

2. ✖ Stress is inversely proportional to strain upto proportional limit.

3. ✖ The elastic limit is between yield point and ultimate point.

4. ✖ The stress obtained by dividing the load with initial area is called true stress.

Question Number : 122 Question Id : 630680427063 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following represent(s) correct pair:

A. Bulk modulus - Volumetric strain

B. Hooke's law - shear strain

C. Poisson's ratio - Lateral strain

D. Modulus of rigidity - Proportional limit

Options :

1. ✖ A and B only

2. ✖ B, C and D only

3. ✖ C and D only

4. ✔ A and C only

Question Number : 123 Question Id : 630680427064 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Read the following statements:

A. The length of a material increases with increase in temperature and if the material is free to do so no stresses are developed

B. The length of a material increases with increase in temperature and if the material is constrained, stresses are developed

Choose the correct answer.

Options :

1. ✖ A only

2. ✖ B only

3. ✔ Both A and B

4. ✖ Neither A nor B

Question Number : 124 Question Id : 630680427065 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What will be type of curve of the bending moment diagram for a cantilever beam if it is subjected to uniformly distributed load over entire span?

Options :

1. ✔ Parabola

2. ✖ Triangular

3. ✖ Linear

4. ✖ Hyperbola

Question Number : 125 Question Id : 630680427066 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following statements regarding the assumptions made in the theory of pure bending:

A. The material is homogeneous.

B. The material is anisotropic.

C. The cross section of the beam is not subjected to shear force.

D. Transverse planes remain plane and perpendicular to the neutral surface after bending.

Choose the correct answer.

Options :

1. ✔ A, C and D only

2. ✖ A, B and C only

3. ✖ A, B, C and D

4. ✖ B, C and D

Question Number : 126 Question Id : 630680427067 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is correct assumption made in the theory of torsion?

Options :

1. ✔ The twisting couple acts in the transverse plane only.

2. ✖ The material is perfectly plastic.

3. ✖ The stress is in plastic zone.

4. ✖ The material of the shaft is anisotropic.

Question Number : 127 Question Id : 630680427068 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Under which of the following condition higher factor of safety is considered?

Options :

1. ✖ The force acting on the machine component is precisely determined.

2. ✖ Material of the machine component is homogeneous.

3. ✖ There is constant load acting on the machine component.

4. ✔ The machine component is working in a corrosive atmosphere.

Question Number : 128 Question Id : 630680427069 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is correct for fits in context to machine design?

Options :

1. ✔ Clearance fit provides positive clearance between hole and shaft over entire range of tolerances.

2. ✖ Clearance fit provides positive clearance between hole and shaft over limited range of tolerances.

3. ✖ Interference fit provides positive clearance between hole and shaft limited over range of tolerances.

4. ✖ Interference fit provides positive interference between hole and shaft over limited range of tolerances.

Question Number : 129 Question Id : 630680427070 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following pairs: (Type of welding joint - welding symbol)

A. plug weld - 

B. Fillet weld - 

C. Spot weld - 

D. Seam weld - 

Choose the correct pair.

Options :

1. ✖ A

2. ✖ B

3. ✖ C

4. ✔ D

Question Number : 130 Question Id : 630680427071 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Read the following statements:

A. Ductility is a measure of the degree of plastic deformation that has been sustained at fracture.

B. Ductility may be expressed quantitatively as either percent elongation.

Choose the correct answer:

Options :

1. ✖ A only

2. ✖ B only

3. ✔ Both A and B

4. ✖ Neither A nor B

Question Number : 131 Question Id : 630680427072 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The forged parts are generally heat treated for the following reasons:

A. To relieve internal stresses set up during working and cooling.

B. To normalise the internal structure of the metal.

C. To improve machinability.

D. To improve hardness, strength and other mechanical properties.

Choose correct answer.

Options :

1. ✖ A, C and D only

2. ✖ A, B and C only

3. ✔ A, B, C and D

4. ✖ B, C and D

Question Number : 132 Question Id : 630680427073 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Match the following:

A. Resilience	1. measure of a material's resistance to localized plastic deformation (e.g., a small dent or a scratch)
B. hardness	2. Fluctuating load
C. fatigue	3. Instantaneous area
D. true stress	4. capacity of a material to absorb energy when it is deformed elastically

Choose the correct answer.

Options :

1. ✖ A-1, B-2, C-3, D-4

2. ✖ A-3, B-1, C-2, D-4

3. ✔ A-4, B-1, C-2, D-3

4. ✖ A-2, B-4, C-3, D-1

Question Number : 133 Question Id : 630680427074 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What will be the pressure due to column of 0.3 m of an oil of specific gravity 0.8?

Options :

1. ✖ 1172 Pa

2. ✖ 4708 Pa

3. ✔ 2354 Pa

4. ✖ 2943 Pa

Question Number : 134 Question Id : 630680427075 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Read the following statements:

A. Steady flow is defined as that type of flow in which the velocity at any given time does not change with respect to space.

B. Uniform flow is defined as that type of flow in which the velocity at any given point does not change with respect to time.

Choose the correct answer.

Options :

1. ✖ A only

2. ✖ B only

3. ✖ Both A and B

4. ✔ Neither A nor B

Question Number : 135 Question Id : 630680427076 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the application of a venturimeter?

Options :

1. ✔ To measure rate of flow of a fluid flowing through pipe.

2. ✖ To measure pressure of a fluid flowing through pipe.

3. ✖ To measure temperature of flow of a fluid flowing through pipe.

4. ✖ To control the pressure of flow of a fluid flowing through pipe.

Question Number : 136 Question Id : 630680427077 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A pitot static tube is used to measure water flow velocity in a pipe. The stagnation and static pressure heads are 6m of water and 5m of water respectively. Calculate the velocity of water flow. Take the coefficient of the tube is 0.98.

Options :

1. ✔ 4.34 m/s

2. ✖ 8.68 m/s

3. ✖ 2.17 m/s

4. ✖ 1.08 m/s

Question Number : 137 Question Id : 630680427078 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What will be the force exerted when a jet of water of diameter 37.5 mm strikes a flat stationary plate normally with velocity 40 m/s?

Options :

1. ✖ 883 N

2. ✖ 3500 N

3. ✔ 1767 N

4. ✖ 441 N

Question Number : 138 Question Id : 630680427079 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Read the following statements:

A. Pelton wheel is a tangential flow turbine.

B. Pelton wheel is a reaction turbine.

Choose the correct answer.

Options :

1. ✔ A only

2. ✖ B only

3. ✖ Both A and B

4. ✖ Neither A nor B

Question Number : 139 Question Id : 630680427080 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Calculate hydraulic efficiency of a Kaplan turbine if the velocity of whirl at inlet is 14.14m/s, peripheral velocity at inlet is 12.21 m/s and the head is 20 m.

Options :

1. ✖ 44%

2. ✔ 88%

3. ✖ 22%

4. ✖ 11%

Question Number : 140 Question Id : 630680427081 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following statements:

A. Kaplan turbine is an impulse turbine.

B. Francis turbine is a reaction turbine.

C. Kaplan turbine is axial flow turbine.

D. Francis turbine is a inward flow turbine

Choose correct answer.

Options :

1. ✖ A, C and D only

2. ✖ A, B and C only

3. ✖ A, B, C and D

4. ✔ B, C and D

Question Number : 141 Question Id : 630680427082 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Arrange the following in increasing order for centrifugal pump:

A. Shaft power

B. output power

C. Impeller power

D. Static power

Options :

1. ✖ A, B, C, D

2. ✖ B, C, D, A

3. ✔ D, B, C, A

4. ✖ C, D, A, B

Question Number : 142 Question Id : 630680427083 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is a function of marketing management?

Options :

1. ✖ Deciding distribution policy

2. ✖ Deciding distribution network

3. ✖ Deciding distribution methods

4. ✔ Conducting Market research

Question Number : 143 Question Id : 630680427084 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is a feature of Neo-classical theory?

Options :

1. ✖ Mechanical structure

2. ✖ Authoritarian practices

3. ✔ Focus on small groups

4. ✖ Emphasis on order and rationality

Question Number : 144 Question Id : 630680427085 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Read the following statements in context to objective of materials management:

A. To develop low inventory turnover ratio.

B. To reduce the material handling cost.

Choose the correct answer.

Options :

1. ✖ A only

2. ✔ B only

3. ✖ Both A and B

4. ✖ Neither A nor B

Question Number : 145 Question Id : 630680427086 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following pairs: (Forecasting method – Characteristic)

A. Trend line technique - Plotting historical data

B. historical estimate - panel of experts

C. Delphi technique - new product in the market

D. Market survey - trust on sales force

Choose the correct answer.

Options :

1. ✔ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 146 Question Id : 630680427087 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Arrange the following events of production management in sequence starting from the event happening first:

A. quality check of the product

B. arrangement of resources : man, material, machine

C. distribution of product

D. production processes

Options :

1. ✖ A, B, C, D

2. ✖ D, B, A, C

3. ✖ C, D, A, B

4. ✔ B, D, A, C

Question Number : 147 Question Id : 630680427088 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is considered in prime cost while estimating costing?

Options :

1. ✔ Direct material cost

2. ✖ Rent

3. ✖ Insurance

4. ✖ Repairs

Question Number : 148 Question Id : 630680427089 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Arrange the following in chronological order:

A. Automation

B. industrial revolution

C. Operation research phase

D. Scientific management phase

Options :

1. ✖ A, C, B, D

2. ✖ B, C, D, A

3. ✔ B, D, C, A

4. ✖ D, C, B, A

Question Number : 149 Question Id : 630680427090 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following in context to the advantages of work study:

A. uniform production flow

B. reduced manufacturing cost

C. job satisfaction

D. reduced wages to workers

Choose correct statement(s).

Options :

1. ✖ A and B only

2. ✖ B and C only

3. ✖ A, B, C and D

4. ✔ A, B and C

Question Number : 150 Question Id : 630680427091 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Match the following for wage/incentive payment plans:

A. Financial incentive	1. Medical facilities
B. Non-Financial incentive	2. Bonus
C. semi Financial incentive	3. Job security

Choose the correct answer.

Options :

1. ✖ A-2, B-1, C-3

2. ✖ A-1, B-2, C-3

3. ✖ A-3, B-1, C-2

4. ✔ A-2, B-3, C-1