Telangana State Council Higher Education

Notations :

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

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

Subject Name :	Mechanical Engineering
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Mechanical Engineering

Group Number :	1
Group Id :	38382337
Group Maximum Duration :	0
Group Minimum Duration :	120
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	120

Mathematics

Section Id :	383823105
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	10
Number of Questions to be attempted :	10

Section Marks : 10
Maximum Instruction Time : 0
Sub-Section Number : 1
Sub-Section Id : 383823105
Question Shuffling Allowed : Yes

Question Number : 1 Question Id : 3838235281 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

Let A be a 3×3 matrix. If λ_1,λ_2 and λ_3 are the eigenvalues of A, then the eigenvalues of the matrix $(I+aA)^{-1}(I+bA)$, where a, b are scalars such that $a\lambda_i \neq -1$, $b\lambda_i \neq -1$, for $i=1,2,3$ are

Options :

1. ✗ $\frac{b\lambda_1}{1+a\lambda_1}, \frac{b\lambda_2}{1+a\lambda_2}, \frac{b\lambda_3}{1+a\lambda_3}$

2. ✗ $\frac{1+b\lambda_1}{1+a\lambda_1}, \frac{1+b\lambda_2}{a\lambda_2}, \frac{1+b\lambda_3}{a\lambda_3}$

3. ✗ $\frac{1+a\lambda_1}{1+b\lambda_1}, \frac{1+a\lambda_2}{1+b\lambda_2}, \frac{1+a\lambda_3}{1+b\lambda_3}$

4. ✓ $\frac{1+b\lambda_1}{1+a\lambda_1}, \frac{1+b\lambda_2}{1+a\lambda_2}, \frac{1+b\lambda_3}{1+a\lambda_3}$

Question Number : 2 Question Id : 3838235282 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

If $a=2024$, $b=2023$ and $c=2022$ then $\begin{vmatrix} \log_a^a & \log_a^b & \log_a^c \\ \log_b^a & \log_b^b & \log_b^c \\ \log_c^a & \log_c^b & \log_c^c \end{vmatrix}$ is

Options :

1. ✓ 0

2. ✗ 1

3. ✗ 2024

4. ✖ 2022

Question Number : 3 Question Id : 3838235283 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If Rolle's theorem is applied for $f(x) = x^3 - x$ in $[-1,1]$, then the values of 'c' of this theorem are

Options :

1. ✖ 0

2. ✖ $\pm\frac{1}{\sqrt{2}}$

3. ✔ $\pm\frac{1}{\sqrt{3}}$

4. ✖ $\frac{1}{2}, \frac{1}{\sqrt{3}}$

Question Number : 4 Question Id : 3838235284 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The value of $\int_0^\infty e^{-x^2} dx$ is

Options :

1. ✖ $\sqrt{\pi}$

2. ✔ $\frac{\sqrt{\pi}}{2}$

3. ✖ $\frac{\sqrt{2}}{\pi}$

4. ✖ $\sqrt{\frac{\pi}{2}}$

Question Number : 5 Question Id : 3838235285 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The necessary condition for the equation $M(x,y)dx + N(x,y) = 0$ to be exact is

Options :

1. ✖ $\frac{\partial N}{\partial y} = \frac{\partial M}{\partial x}$

2. ✖ $\frac{\partial N}{\partial y} = -\frac{\partial M}{\partial x}$

3. ✔ $\frac{\partial M}{\partial y} = \frac{\partial N}{\partial x}$

4. ✖ $\frac{\partial M}{\partial y} = -\frac{\partial N}{\partial x}$

Question Number : 6 Question Id : 3838235286 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Using Laplace transformation, the value of $\int_0^\infty \frac{\sin 2t}{t} dt$ is

Options :

1. ✖ 0

2. ✖ $\frac{3}{s^2+4}$

3. ✖ $\frac{2}{\pi}$

4. ✔ $\frac{\pi}{2}$

Question Number : 7 Question Id : 3838235287 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The value of the integral $\int_C \frac{e^{2z}}{(z-1)(z-2)}dz$ where C is the circle $|z|=3$ is

Options :

1. ✖ $\pi i\left(e^2-e^4\right)$

2. ✔ $2\pi i\left(e^4-e^2\right)$

3. ✖ $\pi i\left(e^4-e^2\right)$

4. ✖ $2\pi i\left(e^2-e^4\right)$

Question Number : 8 Question Id : 3838235288 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Consider $\frac{dy}{dx}=x^2-y, y(0)=1$ using Euler's method with step size of 0.1. Then the value of $y(0.1)$ is

Options :

1. ✖ 0.6

2. ✖ 0.7

3. ✖ 0.8

4. ✔ 0.9

Question Number : 9 Question Id : 3838235289 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The probability density function of a continuous random variate X is

$$f(X=x)=\begin{cases}0, & x<2\\ \frac{3+2x}{18}, & 2\le x\le 4\\ 0, & x>4\end{cases}$$ then the probability that X lies between 2 and 3 is

Options :

1. ✔ $\frac{4}{9}$

2. ✖ $\frac{2}{3}$

3. ✖ $\frac{5}{8}$

4. ✖ $\frac{3}{8}$

Question Number : 10 Question Id : 3838235290 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If the chance that a bus arrives safely at a bus stand is $\frac{9}{10}$, then the probability that out of 5 buses at least 4 will arrive safely is

Options :

1. ✖ $\frac{12\times 9^4}{10^5}$

2. ✖ $14\times\left(\frac{9}{10}\right)^4$

3. ✔ $\frac{14\times 9^4}{10^5}$

4. ✖ $\frac{13\times 9^4}{10^5}$

Mechanical Engineering

Section Id : 383823106

Section Number : 2

Section type : Online

Mandatory or Optional :	Mandatory
Number of Questions :	110
Number of Questions to be attempted :	110
Section Marks :	110
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	383823106
Question Shuffling Allowed :	Yes

Question Number : 11 Question Id : 3838235291 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A mass 'M' is attached at the end of a string whose length is 'L' and whirled at a constant speed in vertical circle. Generally, the tension in the string is minimum when the mass is

Options :

1. ✔ at the top of the circle

2. ✖ half way down from the top

3. ✖ at the bottom of the circle

4. ✖ quarter way down from the top

Question Number : 12 Question Id : 3838235292 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

For a triple threaded screw, the lead is 30 mm and mean diameter of the screw is 80 mm, then the pitch of the screw is

Options :

1. ✖ 30 mm

2. ✖ 20 mm

3. ✔ 10 mm

4. ✖ 60 mm

Question Number : 13 Question Id : 3838235293 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If the coefficient of friction between tyres and the road is 0.6, what is the angle of banking for a highway curve 500 m radius designed to accommodate cars travelling at 180 kmph?

Options :

1. ✖ 45°

2. ✖ 56.30°

3. ✖ 47.56°

4. ✔ 26.56°

Question Number : 14 Question Id : 3838235294 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A car traveling at a speed of 60 kmph came to rest in 6 s after the brakes are applied. The minimum coefficient of friction between the wheels and the road would be

Options :

1. ✖ 0.107

2. ✔ 0.227

3. ✖ 0.3

4. ✖ 0.417

Question Number : 15 Question Id : 3838235295 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The loss of potential energy of an elevator coming down from the top of the building to a stop at the ground floor is

Options :

1. ✖ lost to the driving motors

2. ✖ converted into heat

3. ✖ lost in friction of moving surfaces

4. ✔ used up in lifting up counter weight

Question Number : 16 Question Id : 3838235296 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What is the coefficient of restitution of a perfectly elastic impact?

Options :

1. ✖ 1.0

2. ✖ 0.5

3. ✖ ∞

4. ✔ 0

Question Number : 17 Question Id : 3838235297 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following relations are correct for the Young's modulus in terms of modulus of rigidity (G), Bulk modulus (K) and Poisson's ratio (μ)?

Options :

1. ✔ $2G\left(1+\mu\right),\ 3K\left(1-2\mu\right)\text{and}\ \frac{9KG}{\left(2K+G\right)}$

2. ✖ $2G\left(1-\mu\right),\ 3K\left(1+2\mu\right)\text{and}\ \frac{9KG}{\left(2K-G\right)}$

3. ✖ $2G\left(1+\mu\right),\ 3K\left(1+\mu\right)\text{and}\ \frac{9KG}{\left(3K+G\right)}$

4. ✖ $2G\left(1+\mu\right),\ 3K\left(1-\mu\right)\text{and}\ \frac{9KG}{\left(3K-G\right)}$

Question Number : 18 Question Id : 3838235298 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Two principal stresses at a point in the bar are 200 N/mm^2 (tensile) and 80 N/mm^2 (Compressive). What is the value of maximum shear stress in the bar?

Options :

1. ✖ 60 N/mm^2

2. ✖ 80 N/mm^2

3. ✔ 140 N/mm^2

4. ✖ 200 N/mm^2

Question Number : 19 Question Id : 3838235299 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A shaft subjected to a pure torsion develops the maximum shear stress of 80 MPa. If the shaft diameter is doubled, then the maximum shear stress developed in the shaft corresponding to same torque is

Options :

1. ✔ 10 MPa

2. ✖ 20 MPa

3. ✖ 40 MPa

4. ✖ 80 MPa

Question Number : 20 Question Id : 3838235300 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A thin cylindrical shell subjected to an internal pressure resulted in hoop stress and longitudinal stress. If the radius and thickness of the shell are increased by 10 %, then the increase in percentage of hoop stress and longitudinal stress respectively are

Options :

1. ✖ 10 %, 5 %

2. ✔ 0 %, 0%

3. ✖ 10 %, 10 %

4. ✖ 5 %, 5 %

Question Number : 21 Question Id : 3838235301 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A simply supported beam of length 'L' having the flexural rigidity of 'EI', subjected to a uniformly distributed load of 'w'. Then the maximum bending moment and maximum deflection are

Options :

1. ✖ $\frac{(wL^2)}{2}$ and $\frac{(5wL^4)}{(384\ EI)}$

2. ✖ $\frac{(wL^2)}{8}$ and $\frac{(wL^4)}{(192\ EI)}$

3. ✔ $\frac{(wL^2)}{8}$ and $\frac{(5wL^4)}{(384\ EI)}$

4. ✖ $\frac{(wL^2)}{2}$ and $\frac{(wL^4)}{(192\ EI)}$

Question Number : 22 Question Id : 3838235302 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Based on flexural point, a beam can be considered as strongest due to

Options :

1. ✖ Maximum bending stress

2. ✖ Maximum area of cross section

3. ✔ Maximum section modulus

4. ✖ Maximum moment of inertia

Question Number : 23 Question Id : 3838235303 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The ratio of equivalent lengths for the slender column subjected to the critical load when one end fixed and other free and both the ends fixed is

Options :

1. ✖ 1

2. ✖ 1.414

3. ✖ 2

4. ✔ 4

Question Number : 24 Question Id : 3838235304 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The extension due to self-weight of a bar of uniform cross section being hanged vertically downward is_____ times the extension produced by the same weight applied at the lower end of the vertical bar

Options :

1. ✔ 0.5

2. ✖ 2.0

3. ✖ 0.333

4. ✖ 0.667

Question Number : 25 Question Id : 3838235305 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The relation between number of links (l) and number of joints (j) in a kinematic chain is generally

Options :

1. ✖ $l = \frac{(j+2)}{2}$

2. ✔ $l = \frac{2(j+2)}{3}$

3. ✖ $l = \frac{3(j+3)}{4}$

4. ✖ $l = j + 4$

Question Number : 26 Question Id : 3838235306 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In a slider crank mechanism for $\frac{l}{r}$ ratio of 4, the percentage of stroke converted by piston corresponding to 90° movement of crank from top dead centre is

Options :

1. ✖ 0%

2. ✔ less than 50%

3. ✖ greater than 50%

4. ✖ 100 %

Question Number : 27 Question Id : 3838235307 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The total reaction on the ground when wheels of the vehicle due to gyroscopic couple and the centrifugal force while negotiating the curve is

Options :

1. ✖ increased on inner wheels and decreased on outer wheels

2. ✔ decreased on inner wheels and increased on outer wheels

3. ✖ decreased on all the wheels

4. ✖ increased on all the wheels

Question Number : 28 Question Id : 3838235308 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The point on the cam at which the pressure is maximum is known as

Options :

1. ✔ pitch point

2. ✖ trace point

3. ✖ roller centre

4. ✖ cam centre

Question Number : 29 Question Id : 3838235309 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

For the specified fly wheel design, the variation of the engine speed is from 210 rad/s to 190 rad/s. During the cycle process the change in kinetic energy is found to be 400 N-m, then the moment of inertia of the flywheel in kg-m^2 is

Options :

1. ✖ 0.40

2. ✖ 0.30

3. ✖ 0.20

4. ✔ 0.10

Question Number : 30 Question Id : 3838235310 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In case of balancing problems pertaining to locomotives, the resultant unbalanced force is minimum when

Options :

1. ✔ Half of the reciprocating masses are balanced by rotating masses

2. ✖ Half of the reciprocating masses are balanced by equivalent rotating mass

3. ✖ More than half of the reciprocating masses are balanced by rotating masses

4. ✖ Reciprocating masses are balanced half by equivalent opposite reciprocating masses and the balance by rotating masses

Question Number : 31 Question Id : 3838235311 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

During the design of gear, if the higher-pressure angle is chosen, then the gear has

Options :

1. ✖ weaker teeth

2. ✖ bigger size teeth

3. ✔ wider base and stronger teeth

4. ✖ narrow base and weaker teeth

Question Number : 32 Question Id : 3838235312 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In the analysis of torsional vibrations of the shaft, the node of the shaft is characterized by the

Options :

1. ✖ maximum angular displacement

2. ✖ maximum angular velocity

3. ✔ zero angular displacement

4. ✖ maximum angular acceleration

Question Number : 33 Question Id : 3838235313 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A free damped vibrating system consists of a mass of 200 kg and a spring of stiffness 40 N/mm. If the damping factor is 0.22, the time in which the system would settle down to $1/50^{th}$ of its initial deflection will be

Options :

1. ✖ 1.5 s

2. ✖ 2.45 s

3. ✖ 0.25 s

4. ✔ 0.455 s

Question Number : 34 Question Id : 3838235314 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If the damping factor of the vibrating system is considered as unity, then the type of system is said to be

Options :

1. ✖ over damped

2. ✔ critically damped

3. ✖ under damped

4. ✖ un-damped

Question Number : 35 Question Id : 3838235315 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The endurance limit for the carburized machine components is high because

Options :

1. ✔ introduces compressive layer on the surface

2. ✖ produces the better surface finish

3. ✖ suppresses the stress concentration produced in the component

4. ✖ raises the yield strength of the material

Question Number : 36 Question Id : 3838235316 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What is the failure theory to be considered for the loading of aluminum components under steady load conditions?

Options :

1. ✖ Maximum principal stress theory

2. ✖ Maximum principal strain theory

3. ✔ Maximum shear stress theory

4. ✖ Maximum strain energy theory

Question Number : 37 Question Id : 3838235317 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A welded joint has 'l' mm length and 't' mm thickness fillet carries a steady load of 'F' N along the weld. Then the maximum shear stress induced in the weld in terms of N/mm^2 will be

Options :

1. ✔ $\frac{F}{0.707\,tl}$

2. ✖ $\frac{F}{tl}$

3. ✖ $\frac{0.707\,F}{tl}$

4. ✖ $\frac{F}{1.414\,tl}$

Question Number : 38 Question Id : 3838235318 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In hydrodynamic journal bearing, if the clearance ratio is halved then the Sommer field number 'S' and the coefficient of friction 'μ' will change as

Options :

1. ✖ 'S' becomes doubled and 'μ' is halved

2. ✖ 'S' becomes four times and 'μ' is halved

3. ✔ 'S' becomes four times and 'μ' is doubled

4. ✖ 'S' becomes doubled and 'μ' is doubled

Question Number : 39 Question Id : 3838235319 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A bicycle and rider have a combined mass of 100 kg traveling at 12 km/hr on a level road. A brake is applied to the rear wheel which has 800 mm in diameter. The pressure on the brake is 80 N and the coefficient of friction is 0.05. The distance covered by the bicycle before it comes to rest will be approximately equal to

Options :

1. ✔ 136 m

2. ✖ 125 m

3. ✖ 250 m

4. ✖ 68 m

Question Number : 40 Question Id : 3838235320 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The deflection of a spring with 20 active turns for the specified load is 10 mm. If the same spring is cut into two halves and connected parallel and applied the same load, then the deflection would be

Options :

1. ✖ 10 mm

2. ✖ 20 mm

3. ✖ 5 mm

4. ✔ 2.5 mm

Question Number : 41 Question Id : 3838235321 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

While designing the gears, the Lewis equation is generally used for finding out the following stress?

Options :

1. ✖ Shear stress

2. ✔ Bending stress

3. ✖ Axial stress

4. ✖ Fatigue stress

Question Number : 42 Question Id : 3838235322 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A rectangular block with density of 720 kg/m^3 floats in fluid having the relative density of 0.8. What percentage of block will remain exposed?

Options :

1. ✖ 12 %

2. ✖ 11 %

3. ✔ 10 %

4. ✖ 9 %

Question Number : 43 Question Id : 3838235323 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A fountain has to be designed to raise water to a height of 20 m from the ground level. What would be the speed of water and pressure to be applied by taking g = 10 m/s^2?

Options :

1. ✔ 20 m/s and 200 kPa

2. ✖ 10 m/s and100 kPa

3. ✖ 20 m/s and 100 kPa

4. ✖ 10 m/s and 200 kPa

Question Number : 44 Question Id : 3838235324 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

For a rotational flow, the ratio of normal velocity vector to the angular velocity vector is

Options :

1. ✖ 1.0

2. ✔ 2.0

3. ✖ 0.667

4. ✖ 0.5

Question Number : 45 Question Id : 3838235325 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The velocity distribution in the boundary layer for the turbulent flow over the plate generally follows the law

Options :

1. ✖ parabolic

2. ✖ hyperbolic

3. ✖ linear

4. ✔ logarithmic

Question Number : 46 Question Id : 3838235326 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A fully developed laminar viscous flow through a circular tube has the ratio of maximum velocity to average velocity as

Options :

1. ✖ 3.0

2. ✖ 2.5

3. ✔ 2.0

4. ✖ 1.5

Question Number : 47 Question Id : 3838235327 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Water is flowing through the non-uniform horizontal pipe. The speed and pressure respectively at the extreme narrow cross section of the pipe would be

Options :

1. ✖ maximum and maximum

2. ✔ maximum and minimum

3. ✖ minimum and minimum

4. ✖ minimum and maximum

Question Number : 48 Question Id : 3838235328 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Liquid is flowing through two pipes having the same dimensions and same material. If the ratio of velocities are 2:3, with all other factors remaining same, the ratio of loss of head due to friction is

Options :

1. ✔ 4:9

2. ✖ 9:4

3. ✖ 2:3

4. ✖ 8:27

Question Number : 49 Question Id : 3838235329 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If 'k' is the thermal conductivity, 'ρ' is the mass density and 'c' is the specific heat then the thermal diffusivity of substance is

Options :

1. ✖ $\frac{kc}{\rho}$

2. ✖ $\frac{k\rho}{c}$

3. ✔ $\frac{k}{\rho c}$

4. ✖ $\frac{\rho c}{k}$

Question Number : 50 Question Id : 3838235330 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A hollow pipe of 10 mm outer diameter is to be insulated by thick cylindrical insulation having thermal conductivity of 1 W/m K. The surface heat transfer coefficient on the insulation surface is 5 W/m^2 K. What is the minimum effective thickness of insulation for causing the reduction in heat leakage from the insulated pipe?

Options :

1. ✔ 195 mm

2. ✖ 200 mm

3. ✖ 205 mm

4. ✖ 210 mm

Question Number : 51 Question Id : 3838235331 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

For the fins arrangement, when the other conditions are remaining same, to get better effectiveness the fins should be

Options :

1. ✖ thick and closely spaced

2. ✖ thick and widely spaced

3. ✔ thin and closely spaced

4. ✖ thin and widely spaced

Question Number : 52 Question Id : 3838235332 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In the lumped mass system of transient analysis, for calculation of Biot number, the characteristic length should be considered as the ratio of

Options :

1. ✖ surface area and perimeter

2. ✔ volume and surface area

3. ✖ volume and perimeter

4. ✖ perimeter and surface area

Question Number : 53 Question Id : 3838235333 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

For flow over flat plate the hydrodynamic boundary layer thickness is 0.5 mm. If the dynamic viscosity is 25 x 10^{-6} Pa-s, specific heat 2000 J/kg K and the thermal conductivity is 0.05 W/m K, then what would be the thermal boundary layer thickness?

Options :

1. ✖ 0.7 mm

2. ✔ 0.5 mm

3. ✖ 0.3 mm

4. ✖ 0.1 mm

Question Number : 54 Question Id : 3838235334 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A heat exchanger has been designed with heat transfer surface area of 'A' and overall heat transfer coefficient 'U' handles two different fluids of heat capacities of C_{min} and C_{max}. The parameter NTU used in the analysis of heat exchanger is specified as

Options :

1. ✖ AU/C_{max}

2. ✖ C_{max}/AU

3. ✔ AU/C_{min}

4. ✖ C_{min}/AU

Question Number : 55 Question Id : 3838235335 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Radiation heat transfer in the system is characterized by

Options :

1. ✖ Due to bulk fluid motion, there is a transport of energy

2. ✖ Thermal energy transfer as vibrational energy in lattice structure of the material

3. ✖ There is circulation of fluid by buoyancy effects

4. ✔ Movement of discrete packets of energy as electromagnetic waves

Question Number : 56 Question Id : 3838235336 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The slope of curve on p-V diagram for different processes

Options :

1. ✖ decreases in negative direction with the increase of polytropic index

2. ✔ increases in negative direction with the increase of polytropic index

3. ✖ decreases in negative direction with the decrease of polytropic index

4. ✖ does not change with the increase of polytropic index

Question Number : 57 Question Id : 3838235337 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The COP of heat pump in comparison with COP of refrigeration cycle for the specified temperature limits is given by

Options :

1. ✖ $COP_{HP} + COP_R = 1$

2. ✔ $COP_{HP} - COP_R = 1$

3. ✖ $COP_{HP} \times COP_R = 1$

4. ✖ $COP_{HP}/COP_R = 1$

Question Number : 58 Question Id : 3838235338 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In a polytropic process, heat rejected is given by

Options :

1. ✔ $\frac{\gamma - n}{\gamma - 1} \times$ Work done on the system

2. ✖ $\frac{\gamma}{\gamma - 1} \times$ Work done on the system

3. ✖ $\frac{\gamma - n}{\gamma} \times$ Work done on the system

4. ✖

$\frac{\gamma - n}{n} \times$ Work done on the system

Question Number : 59 Question Id : 3838235339 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

"Heat cannot flow by itself from a body at lower temperature to a body at higher temperature" and can be done by the supply of external work is

Options :

1. ✖ Kelvin Planck statement of second law of thermodynamics

2. ✖ First law of thermodynamics

3. ✖ Zeroth law of thermodynamics

4. ✔ Clausius statement of second law of thermodynamics

Question Number : 60 Question Id : 3838235340 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

2 kg of a substance receives 500 kJ heat and undergoes a temperature change from 100 °C to 200 °C. The average specific heat of the substance during the process (in kJ/kg K) will be

Options :

1. ✖ 5

2. ✖ 10

3. ✖ 25

4. ✔ 2.5

Question Number : 61 Question Id : 3838235341 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The equation for the state of real gas in terms of reduced form is

Options :

1. ✔

$$(P_r+\frac{3}{V_r^2})(3V_r-1)=8T_r$$

2. ✖ $$(P_r+\frac{3}{V_r})(3V_r-1)=8T_r$$

3. ✖ $$(P_r-\frac{3}{V_r^2})(3V_r+1)=8T_r$$

4. ✖ $$(P_r-\frac{3}{V_r})(3V_r-1)=8T_r$$

Question Number : 62 Question Id : 3838235342 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A reversible engine is being operated with the temperature limits of 800 K and 300 K.
If it takes heat 560 kJ, then the available energy and unavailable energy are

Options :

1. ✔ 350 kJ and 210 kJ

2. ✖ 300 kJ and 260 kJ

3. ✖ 210 kJ and 350 kJ

4. ✖ 260 kJ and 300 kJ

Question Number : 63 Question Id : 3838235343 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

According to the Joules law of a perfect gas, the internal energy is a function of

Options :

1. ✖ pressure only

2. ✔ absolute temperature only

3. ✖ specific volume only

4. ✖ absolute entropy only

Question Number : 64 Question Id : 3838235344 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The volumetric efficiency of a reciprocating compressor has the clearance ratio 'k' and the pressure ratio p_2/p_1 is calculated by using the following equation

Options :

1. ✖ $1 + k + k\,(p_2/p_1)^{1/n}$

2. ✖ $1 - k + k\,(p_2/p_1)^{1/n}$

3. ✔ $1 + k - k\,(p_2/p_1)^{1/n}$

4. ✖ $1 + k - k\,(p_2/p_1)^{n}$

Question Number : 65 Question Id : 3838235345 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Generally, the rotary compressors are used for delivering for the following conditions

Options :

1. ✖ small quantities of air at high pressures

2. ✔ large quantities of air at low pressures

3. ✖ small quantities of air at low pressures

4. ✖ large quantities of air at high pressures

Question Number : 66 Question Id : 3838235346 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The air standard efficiency of Diesel cycle reaches to Otto cycle when the following condition is satisfied

Options :

1. ✖ increased cut-off ratio

2. ✖ decreased cut-off ratio

3. ✖ constant cut-off ratio

4. ✔ zero cut-off ratio

Question Number : 67 Question Id : 3838235347 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

For the same compression ratio and heat rejection, the thermal efficiency is

Options :

1. ✔ Otto > Dual > Diesel

2. ✖ Diesel > Dual > Otto

3. ✖ Dual > Diesel > Otto

4. ✖ Dual > Otto > Diesel

Question Number : 68 Question Id : 3838235348 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

During the compression process of a vapour compression refrigeration system

Options :

1. ✖ Specific enthalpy before and after the compression is same

2. ✖ Internal energy before and after the compression is same

3. ✖ Temperature before compression and after the compression is same

4. ✔ Specific entropy before and after the compression is same

Question Number : 69 Question Id : 3838235349 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Consider the following statement and choose the correct one

I. Dew point is reached by cooling the air at constant moisture content
II. Wet bulb temperature changes by addition of moisture at constant enthalpy
III. For saturated air, dry bulb, wet bulb and dew point temperatures are same
IV. Dehumidification of air is achieved by heating

Options :

1. ✖ Only I and II

2. ✔ Only I and III

3. ✖ only III and IV

4. ✖ Only II and IV

Question Number : 70 Question Id : 3838235350 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Choose the correct statement with respect to the impulse steam turbine operated based on Rankine cycle

Options :

1. ✔ Complete conversion of pressure into velocity initially in the nozzles

2. ✖ Conversion of pressure into kinetic energy in fixed blades and expansion in moving blades

3. ✖ Requirement of draft tube is necessary

4. ✖ Degree of reaction is high

Question Number : 71 Question Id : 3838235351 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The incorporation of intercooling system between low-pressure and high-pressure compressors of Brayton cycle

Options :

1. ✖ increases the thermal efficiency and decreases the net work output

2. ✖ increases both thermal efficiency and net work output

3. ✖ decreases both thermal efficiency and net work output

4. ✔ decreases the thermal efficiency and increases the net work output

Question Number : 72 Question Id : 3838235352 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The ratio of speed of a Pelton wheel and the speed of the jet for maximum head efficiency is

Options :

1. ✖ 1.0

2. ✖ 0.25

3. ✖ 0.333

4. ✔ 0.5

Question Number : 73 Question Id : 3838235353 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If the blade efficiency is 80% and the stage efficiency is 60%, what is nozzle efficiency of a deLaval turbine?

Options :

1. ✖ 70%

2. ✔ 75%

3. ✖ 80%

4. ✖ 85%

Question Number : 74 Question Id : 3838235354 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The alloy of copper which can be used against fatigue, wear and corrosion is

Options :

1. ✖ Phosphorous bronze

2. ✔ Beryllium bronze

3. ✖ Aluminum bronze

4. ✖ Cartridge bronze

Question Number : 75 Question Id : 3838235355 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

During the crystallization process, the energy which retards is called as

Options :

1. ✔ free surface energy

2. ✖ kinetic energy

3. ✖ vibration energy

4. ✖ activation energy

Question Number : 76 Question Id : 3838235356 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What is the element to be added to the molten cast iron in order to obtain the nodular cast iron?

Options :

1. ✖ Cr

2. ✖ Mn

3. ✔ Mg

4. ✖ Cu

Question Number : 77 Question Id : 3838235357 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The complete transformation of austenite takes place during cooling from liquid state at

Options :

1. ✔ just below 723 °C

2. ✖ just below 910 °C

3. ✖ just above 723 °C

4. ✖ just above 910 °C

Question Number : 78 Question Id : 3838235358 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The important parameter which is considered for the measure of ductility is

Options :

1. ✖ Ultimate tensile strength

2. ✖ Yield strength

3. ✔ Percentage of elongation

4. ✖ Modulus of toughness

Question Number : 79 Question Id : 3838235359 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Quenching is not necessary when the hardening process is done by the following way

Options :

1. ✖ case carburizing

2. ✖ flame hardening

3. ✖ induction hardening

4. ✔ normalising

Question Number : 80 Question Id : 3838235360 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In a situation where water passes through a bearing, preferred material for bearing is

Options :

1. ✔ Lignum vitae

2. ✖ Cast iron

3. ✖ Babbit

4. ✖ Teflon

Question Number : 81 Question Id : 3838235361 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A spherical drop of liquid metal 'r' mm radius takes 12 seconds to solidify. What would be the time taken to solidify if the diameter of the drop is doubled?

Options :

1. ✖ 24 seconds

2. ✖ 36 seconds

3. ✔ 48 seconds

4. ✖ 96 seconds

Question Number : 82 Question Id : 3838235362 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following material requires the largest solid shrinkage allowance, while making a pattern for casting?

Options :

1. ✖ Aluminum

2. ✔ Brass

3. ✖ Cast iron

4. ✖ Plain carbon steel

Question Number : 83 Question Id : 3838235363 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

For the design of gating system, the ratio 1:2:4 represents

Options :

1. ✔ sprue base area : ruuner area : ingate area

2. ✖ pouring basin area : ingate area : runner area

3. ✖ sprue base area : ingate area : casting area

4. ✖ runner area : ingate area : casting area

Question Number : 84 Question Id : 3838235364 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following pair is a wrong pair with respect to metal casting process

Options :

1. ✖ Hot tears – poor mould collapsibility

2. ✔ sand inclusions – hard ramming of sand

3. ✖ Porosity – gas entrapment

4. ✖ shrinkage cavity – inadequate risering

Question Number : 85 Question Id : 3838235365 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The property of sand by virtue of which sand grains stick together is generally called

Options :

1. ✖ Permeability

2. ✔ Cohesiveness

3. ✖ Adhesiveness

4. ✖ Collapsibility

Question Number : 86 Question Id : 3838235366 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Calculate the minimum number of hot rolling passes required to reduce an ingot of 200 mm thickness to 100 mm thickness in two high reversible rolling mill with roll diameter of 500 mm. The coefficient of friction between rolls and the hot material for all the passes is assumed as 0.2

Options :

1. ✖ 8

2. ✖ 9

3. ✔ 10

4. ✖ 11

Question Number : 87 Question Id : 3838235367 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which type of metal forming process is used to make utensils and cup shaped products?

Options :

1. ✖ Extrusion

2. ✖ Forging

3. ✔ Deep drawing

4. ✖ Rolling

Question Number : 88 Question Id : 3838235368 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The cutting tool manufactured by powder metallurgy is

Options :

1. ✖ High speed steel

2. ✖ High carbon steel

3. ✖ Low carbon steel

4. ✔ Sintered carbides

Question Number : 89 Question Id : 3838235369 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The high alloy steel components are preheated before welding for reducing

Options :

1. ✖ heat affected zone

2. ✖ time of welding

3. ✖ energy consumption

4. ✔ welding stress

Question Number : 90 Question Id : 3838235370 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The joint configuration best suited for adhesive bonding is

Options :

1. ✔ lap

2. ✖ fillet

3. ✖ spot

4. ✖ butt

Question Number : 91 Question Id : 3838235371 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

During brazing joint process, the commonly used flux material is

Options :

1. ✔ Borax

2. ✖ Resin

3. ✖ Lead sulphide

4. ✖ Zinc chloride

Question Number : 92 Question Id : 3838235372 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The predominant wear occurring in cemented carbide cutting tools is

Options :

1. ✖ crater wear

2. ✖ spalling

3. ✔ flank wear

4. ✖ surface roughness

Question Number : 93 Question Id : 3838235373 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The hardest cutting tool material after the diamond is

Options :

1. ✔ Cubic Boron Nitride

2. ✖ Tungsten Carbide

3. ✖ Titanium Carbide

4. ✖ Ceramics

Question Number : 94 Question Id : 3838235374 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The correct sequence of elements of 18-4-1 HSS tool is

Options :

1. ✔ W, Cr, V

2. ✖ Mo, Cr, V

3. ✖ Cr, Ni, C

4. ✖ Cu, Zn, Sn

Question Number : 95 Question Id : 3838235375 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

It is required to cut screw threads of 2 mm pitch on a lathe. The lead screw has a pitch of 6 mm. If the spindle speed is 60 rpm, then speed of the lead screw is

Options :

1. ✖ 200 rpm

2. ✔ 20 rpm

3. ✖ 120 rpm

4. ✖ 180 rpm

Question Number : 96 Question Id : 3838235376 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

When a CNC system is capable of automatically adjusting the speed and feed parameters according to actual cutting conditions the system is said to have

Options :

1. ✖ Programmable logic control

2. ✖ Automatic speed control

3. ✖ Direct Numerical Control

4. ✔ Adaptive control

Question Number : 97 Question Id : 3838235377 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Optimum rake angle for the single point cutting tool is generally being considered as a function of

Options :

1. ✖ Feed and depth of cut

2. ✔ Properties of the work material

3. ✖ Cutting speed

4. ✖ Cutting tool material

Question Number : 98 Question Id : 3838235378 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The surface plate is usually made of grey cast iron because it provides

Options :

1. ✖ hard plate

2. ✖ wear resistant plate

3. ✖ easy to manufacture

4. ✔ lubricates due to graphite flakes

Question Number : 99 Question Id : 3838235379 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A shaft has diameter $20^{+0.05}_{-0.15}$ mm and a hole diameter $20^{+0.20}_{-0.10}$ mm. When these are assembled, then what is the nature of fit yield?

Options :

1. ✖ clearance fit

2. ✖ interference fit

3. ✔ transition fit

4. ✖ best fit

Question Number : 100 Question Id : 3838235380 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The thread characteristics can be measured precisely by the following instrument

Options :

1. ✖ Screw pitch gauge

2. ✔ Tool room microscope

3. ✖ thread gauge

4. ✖ slip gauge

Question Number : 101 Question Id : 3838235381 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Accurate centering of work mounted in an independent chuck can be determined by using

Options :

1. ✖ Centre gauge

2. ✖ Dial indicator

3. ✔ Height gauge

4. ✖ Surface gauge

Question Number : 102 Question Id : 3838235382 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which type of coordinate measuring machine is most suited for large heavy work pieces?

Options :

1. ✖ Cantilever type

2. ✖ Bridge type

3. ✖ Floated bridge type

4. ✔ Horizontal boring mill type

Question Number : 103 Question Id : 3838235383 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A computer program written in a high level language is called as

Options :

1. ✔ Source program

2. ✖ Object program

3. ✖ Basic program

4. ✖ Application program

Question Number : 104 Question Id : 3838235384 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A collection of wires that connect several devices in the computer integrated manufacturing system is

Options :

1. ✖ Link

2. ✖ Directional wires

3. ✖ Cable

4. ✔ Bus

Question Number : 105 Question Id : 3838235385 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If a robot can alter its own trajectory in response to external conditions, then it is considered as

Options :

1. ✖ Mobile robot

2. ✔ Intelligent robot

3. ✖ Expert robot

4. ✖ Fifth gen robot

Question Number : 106 Question Id : 3838235386 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following statement is not a decision taken during the aggregate production planning stage?

Options :

1. ✖ Scheduling of machines

2. ✖ Regular time production capacity

3. ✔ Amount of labour to be committed

4. ✖ Inventory to be carried forward

Question Number : 107 Question Id : 3838235387 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following forecasting methods take a fraction of forecast error into account for the next period of forecast?

Options :

1. ✖ Simple average method

2. ✖ Weighted moving average method

3. ✖ Moving average method

4. ✔ Exponential smoothening method

Question Number : 108 Question Id : 3838235388 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The first activity of purchasing cycle of material requirement planning is

Options :

1. ✖ Communicating requirement to the purchase

2. ✖ Source Selection and development

3. ✔ Recognizing the need for procurement

4. ✖ Inspection of goods

Question Number : 109 Question Id : 3838235389 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The decision of assigning the various jobs to different machines and equipment is termed as

Options :

1. ✖ routing

2. ✖ scheduling

3. ✖ loading

4. ✔ dispatching

Question Number : 110 Question Id : 3838235390 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Lean manufacturing process is generally being implemented to make a

Options :

1. ✔ way to improve the customer value

2. ✖ efficiency improvement technique

3. ✖ method to reduce the labour

4. ✖ way to eliminate the jobs

Question Number : 111 Question Id : 3838235391 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The economic order quantity of a company based on inventory control theory is

Options :

1. ✖ Average level of inventory

2. ✔ Optimum lot size is to be maintained

3. ✖ Capacity of warehouse

4. ✖ Lot size corresponding to break even analysis

Question Number : 112 Question Id : 3838235392 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The product 'A' has the demand of 1000 with ordering cost Rs 100/- per order with a holding cost of Rs 40/- per year. Another product 'B' has the demand of 3600 with the ordering cost of Rs 100/- per year with a holding cost of Rs 100/- per year. What is the ratio of EOQs 'B' to 'A'?

Options :

1. ✔ 1.5

2. ✖ 1.2

3. ✖ 2.5

4. ✖ 3.5

Question Number : 113 Question Id : 3838235393 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In A-B-C inventory control technique, the maximum attention is given to the items which

Options :

1. ✖ consume more time to get supply

2. ✔ having more annual consumption value

3. ✖ are perishable in nature

4. ✖ are surplus

Question Number : 114 Question Id : 3838235394 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The charts which present graphically the process of work by showing the machine operation, man hour performance, quantities completed, etc., to facilitate day-to-day planning of the work are termed as

Options :

1. ✖ man-machine charts

2. ✖ break-even charts

3. ✖ SIMO charts

4. ✔ Gantt charts

Question Number : 115 Question Id : 3838235395 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The artificial activity which indicates that an activity following it cannot be started unless the preceding activity is complete, is known as

Options :

1. ✖ free float

2. ✔ dummy activity

3. ✖ slack activity

4. ✖ negative activity

Question Number : 116 Question Id : 3838235396 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The optimality of a transportation problem is determined by the application of

Options :

1. ✖ North West corner method

2. ✖ MODI method

3. ✔ Vogel's applications method

4. ✖ Least cost method

Question Number : 117 Question Id : 3838235397 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In case of solution of two variable linear programming problem by graphical method one constraint time comes parallel to the objective function line. The problem will have

Options :

1. ✖ infeasible solution

2. ✖ unbounded solution

3. ✖ degenerate solution

4. ✔ infinite number of solutions

Question Number : 118 Question Id : 3838235398 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The cost of proving service in a queuing system increases with

Options :

1. ✔ decreased mean time of the queue

2. ✖ increased arrival time

3. ✖ decreased arrival time

4. ✖ increased mean time of the queue

Question Number : 119 Question Id : 3838235399 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In critical path method, critical path moves along with the activities having total float of

Options :

1. ✖ positive value

2. ✖ same value

3. ✔ zero value

4. ✖ negative value

Question Number : 120 Question Id : 3838235400 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Hungarian method is generally used to solve the following type of problem

Options :

1. ✖ Linear programming problem

2. ✔ Assignment problem

3. ✖ Transportation problem

4. ✖ Simple queuing problem