# Andhra Pradesh State Council of 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.

| | |
|---|---|
| **Question Paper Name :** | Mechanical Engineering 28th Sep 2021 Shift2 |
| **Duration :** | 120 |
| **Total Marks :** | 120 |
| **Display Marks:** | No |
| **Share Answer Key With Delivery Engine :** | 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? ( SA type of questions will be always auto saved ) :** | Yes |
| **Is this Group for Examiner? :** | No |

# Mechanical Engineering

| | |
|---|---|
| **Section Id :** | 5875877 |
| **Section Number :** | 1 |
| **Mandatory or Optional :** | Mandatory |
| **Number of Questions :** | 120 |
| **Section Marks :** | 120 |
| **Enable Mark as Answered Mark for Review and Clear Response :** | Yes |

**Question Number : 1 Question Id : 587587721 Display Question Number : Yes Is Question Mandatory : No**

The Poisson ratio of a material that has a young's modulus of 120GPa and shear modulus of 50 GPa, is

**Options :**

1. ✖ 0.1

2. ✔ 0.2

3. ✖ 0.3

4. ✖ 0.4

**Question Number : 2 Question Id : 587587722 Display Question Number : Yes Is Question Mandatory : No**

A cantilever beam carries a load W uniformly distributed over its entire length. If the same load is placed at the free end of the same cantilever, then the ratio of maximum deflection in the first case to that in the second case will be

**Options :**

1. ✔ 3/8

2. ✖ $8/3$

3. ✖ $5/8$

4. ✖ $8/5$

**Question Number : 3 Question Id : 587587723 Display Question Number : Yes Is Question Mandatory : No**

A cantilever of length $l$, Moment of inertia $I$, Young's module $E$ carries a concentrated load $W$ at the end of its length. The slope of the cantilever at the free end is

**Options :**

1. ✖ $Wl^3/2EI$

2. ✖ $Wl^3/4EI$

3. ✖ $Wl^3/8EI$

4. ✔ $Wl^3/3EI$

**Question Number : 4 Question Id : 587587724 Display Question Number : Yes Is Question Mandatory : No**

Hook's law holds good up to

**Options :**

1. ✖ Yield point

2. ✔ Elastic limit

3. ✖ Plastic limit

4. ✖ Breaking point

**Question Number : 5 Question Id : 587587725 Display Question Number : Yes Is Question Mandatory : No**

The unit of modulus of elasticity is the same as those of

**Options :**

1. ✖ Stress, strain and pressure

2. ✖ Stress, force and modulus of rigidity

3. ✖ Strain, force and pressure

4. ✔ Stress, pressure and modulus of rigidity

**Question Number : 6 Question Id : 587587726 Display Question Number : Yes Is Question Mandatory : No**

The resilience per unit volume is given by

**Options :**

1. ✖ Area under stress-strain curve

2. ✖ Maximum stress at elastic limit

3. ✔ Proof resilience

4. ✖ Work done

**Question Number : 7 Question Id : 587587727 Display Question Number : Yes Is Question Mandatory : No**

The number of degrees of freedom of a planar linkage with 8 links and 9 simple joints is

**Options :**

1. ✖ 1

2. ✖ 2

3. ✔ 3

4. ✖ 4

**Question Number : 8 Question Id : 587587728 Display Question Number : Yes Is Question Mandatory : No**

Consider the triangle formed by a connecting rod and a crank of an I.C. engine. If the maximum area of the triangle occurs when the crank angle is 750, then the ratio of lengths of the connecting rod and the crank is

**Options :**

1. ✖ 5.27

2. ✖ 4.75

3. ✖ 3.13

4. ✔ 3.73

**Question Number : 9 Question Id : 587587729 Display Question Number : Yes Is Question**

**Mandatory : No**

The mechanism used in shaping machine is

**Options :**

1. ✖ A four-bar chain having four revolute pairs

2. ✖ A six-bar chain having six revolute pairs

3. ✖ A four-bar chain having two revolute pairs and two sliding pairs

4. ✔ An inversion of slider crank chain

**Question Number : 10 Question Id : 587587730 Display Question Number : Yes Is Question Mandatory : No**

Door latch (bolt) can be an example for

**Options :**

1. ✖ A higher pair

2. ✖ A sliding pair

3. ✔ A cylindrical pair

4. ✖ A revolute pair

**Question Number : 11 Question Id : 587587731 Display Question Number : Yes Is Question Mandatory : No**

**Match the following**

| | Name of the mechanism | | Type of reciprocating motion |
|---|---|---|---|
| P. | Slider crank mechanism | 1. | Irreversible motion |
| Q. | Whitworth quick return mechanism | 2. | Contains single frequency with Time Ratio equal to 1 |
| R. | Scotch yoke mechanism | 3. | It contains several frequencies with a Time Ratio equal to 1 |
| S. | Eccentric mechanism | 4. | It contains several frequencies with a Time Ratio not equal to 1 |
| T. | Slider crank mechanism with offset | | |

**Options :**

1. ✖ P – 3 Q – 1 R – 2 S – 1 T – 4

2. ✖ P – 3 Q – 4 R – 1 S – 2 T – 4

3. ✖ P – 2 Q – 3 R – 1 S – 4 T – 4

4. ✔ P – 3 Q – 4 R – 2 S – 1 T – 4

**Question Number : 12 Question Id : 587587732 Display Question Number : Yes Is Question Mandatory : No**

Consider the following statements.

1. The degrees of freedom of lower kinematic pairs is always one.
2. A ball and socket joint have three degrees of freedom and is a higher pair.
3. Oldham coupling has two prismatic pairs and two revolute pairs.

Identify the correct statement(s).

**Options :**

1. ✖ 1, 2 and 3

2. ✖ 1 only

3. ✖ 2 and 3

4. ✔ 3 only

**Question Number : 13 Question Id : 587587733 Display Question Number : Yes Is Question**

**Mandatory : No**

The formula for the number of degrees of freedom (F) of a plane mechanism may be expressed as

**Options :**

1. ✖ $F = 3n + 2j - h - 3$

2. ✔ $F = 3n - 2j - h - 3$

3. ✖ $F = 3n - 2j - h + 3$

4. ✖ $F = 3n - 2j + h - 3$

**Question Number : 14 Question Id : 587587734 Display Question Number : Yes Is Question**

**Mandatory : No**

In an elliptic trammel, the length of the link connecting the sliders is 100 mm. The tracing pen is placed on a 150mm extension of this link. The major and minor axes (in mm) of the ellipse traced will be, respectively

**Options :**

1. ✖ 250 and 150

2. ✖ 250 and 100

3. ✔ 500 and 300

4. ✖ 500 and 200

**Question Number : 15 Question Id : 587587735 Display Question Number : Yes Is Question Mandatory : No**

In the following, each option is representing lengths (in mm) of a set of four links.
Which one of them can form a four-bar mechanism?

**Options :**

1. ✖ 40, 70, 200 and 60

2. ✖ 150, 60, 40 and 80

3. ✖ 80, 300, 90 and 100

4. ✔ 200, 50, 70 and 400

**Question Number : 16 Question Id : 587587736 Display Question Number : Yes Is Question Mandatory : No**

An Ackerman steering mechanism may be classed as,

**Options :**

1. ✖ crank rocker mechanism

2. ✖ Grashof mechanism

3. ✖ double rocker mechanism

4. ✔ triple rocker mechanism

**Question Number : 17 Question Id : 587587737 Display Question Number : Yes Is Question Mandatory : No**

A reverted gear train is

**Options :**

1. ✖ a simple gear train

2. ✖ a simple gear train involving a compound gear

3. ✔ a simple gear train involving a compound gear and the input and output axes are collinear

4. ✖ an epicyclic gear train

**Question Number : 18 Question Id : 587587738 Display Question Number : Yes Is Question Mandatory : No**

Which of the following statements is not correct?

**Options :**

1. ✖ Instantaneous center is a point common to two links

2. ✖ Instantaneous center is valid only at a particular instant

3. ✖ At the instantaneous center, the relative velocity between the two links is zero

4. ✔ The instantaneous center of any two links must be on any one of the two links

**Question Number : 19 Question Id : 587587739 Display Question Number : Yes Is Question Mandatory : No**

The maximum angular velocity of the connecting rod with a crank to connecting rod ratio 1:5 for a crank speed of 3000rpm would be

**Options :**

1. ✖ 60π rad/s

2. ✔ 20π rad/s

3. ✖ 15π rad/s

4. ✖ 10π rad/s

**Question Number : 20 Question Id : 587587740 Display Question Number : Yes Is Question Mandatory : No**

A simple gear train is one in which

**Options :**

1. ✔ all gears rotate about fixed points

2. ✖ all gears rotate about moving points

3. ✖ at least one gear should rotate about moving point

4. ✖ there is at least one compound gear

**Question Number : 21 Question Id : 587587741 Display Question Number : Yes Is Question Mandatory : No**

Cycloidal motion is considered to be superior to all other types of motions because it offers

**Options :**

1. ✖ Jerk-free motion

2. ✖ Large pressure angles throughout

3. ✔ Jerk is present but finite

4. ✖ Finite acceleration

**Question Number : 22 Question Id : 587587742 Display Question Number : Yes Is Question Mandatory : No**

In the parabolic motion of the follower, during the lift period

**Options :**

1. ✖ The velocity of the follower is constant

2. ✔ The velocity increases and decreases at constant rate

3. ✖ The acceleration is zero

4. ✖ The acceleration increases and decreases at constant rate

**Question Number : 23 Question Id : 587587743 Display Question Number : Yes Is Question Mandatory : No**

The simple harmonic motion of the follower of a cam mechanism takes place with a frequency.

**Options :**

1. ✔ $\omega$

2. ✖ $\pi\omega$

3. ✖ $\pi\omega/\beta$

4. ✖ $2\pi\omega/\beta$

**Question Number : 24 Question Id : 587587744 Display Question Number : Yes Is Question Mandatory : No**

Offset is provided to follower in cam mechanisms in order to

**Options :**

1. ✔ reduce the pressure angle

2. ✖ increase the pressure angle

3. ✖ make the pressure angle more or less uniform

4. ✖ minimize jerk for the follower

**Question Number : 25 Question Id : 587587745 Display Question Number : Yes Is Question Mandatory : No**

In a parallelogram type four-bar mechanism, the velocity diagram is

**Options :**

1. ✖ A triangle

2. ✖ A straight line parallel to the coupler rod

3. ✖ A straight line parallel to the crank

4. ✔ A straight line perpendicular to the crank

**Question Number : 26 Question Id : 587587746 Display Question Number : Yes Is Question Mandatory : No**

The time period of oscillations of a simple pendulum is

**Options :**

1. ✔ Directly proportional to the square root of the length of the pendulum

2. ✖ Inversely proportional to the square root of the length of the pendulum

3. ✖ Directly proportional to the length of the pendulum

4. ✖ inversely proportional to the length of the pendulum

**Question Number : 27 Question Id : 587587747 Display Question Number : Yes Is Question Mandatory : No**

When a mass of 4.3kg is attached to a spring, the spring showed an elongation of 0.1mm. What could be the resonating frequency?

**Options :**

1. ✖ 40 Hz

2. ✔ 50 Hz

3. ✖ 57 Hz

4. ✖ 62 Hz

**Question Number : 28 Question Id : 587587748 Display Question Number : Yes Is Question Mandatory : No**

Which of the following is/are correct?

1. $f_n \omega_n = 2\pi$
2. $\tau_n \omega_n = 2\pi$
3. $\tau_n f_n = 1$

**Options :**

1. ✖ Only 1 is correct

2. ✖ 1 and 2 are correct

3. ✔ 2 and 3 are correct

4. ✖ 3 and 1 are correct

**Question Number : 29 Question Id : 587587749 Display Question Number : Yes Is Question Mandatory : No**

A vibrating system is described by $\ddot{x} + 7x = 0$
What is the time period of oscillations?

**Options :**

1. ✖ 0.57s

2. ✖ 1.19s

3. ✔ 2.37s

4. ✖ 3.37s

**Question Number : 30 Question Id : 587587750 Display Question Number : Yes Is Question Mandatory : No**

A vibrating system is described by $7\ddot{x} + 9\,\dot{x} + kx = 0$
What is the range of values of $k$ to make the system *underdamped*?

**Options :**

1. ✔ $> 2.89$

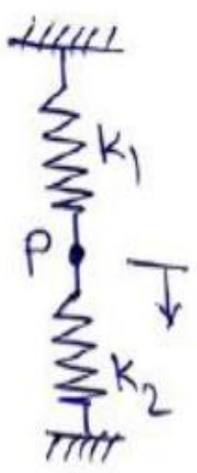
2. ✖ $< 2.89$

3. ✖ $< 9$

4. ✖ $< 81$

**Question Number : 31 Question Id : 587587751 Display Question Number : Yes Is Question Mandatory : No**

The figure shows two springs k1 and k2 connected in series. If we are interested in measuring the displacement of point P for a load applied at P only, then the equivalent stiffness would be




**Options :**

1. ✔ $(k_1 + k_2)$

2. ✖ $\frac{(k_1+k_2)}{2}$

3. ✖ $\frac{k_1^2}{(k_1+k_2)}$

4. ✖ $\frac{k_1 k_2}{k_1 + k_2}$

**Question Number : 32 Question Id : 587587752 Display Question Number : Yes Is Question Mandatory : No**

Two shafts A and B, are made of the same material. The diameter of shaft B is twice that of shaft B. The ratio of power which can be transmitted by shaft A to that of shaft B is

**Options :**

1. ✖ 1/2

2. ✖ 1/4

3. ✔ 1/8

4. ✖ 1/16

**Question Number : 33 Question Id : 587587753 Display Question Number : Yes Is Question Mandatory : No**

The principal stresses at a point inside a solid object are $\sigma_1 = 100MPa$, $\sigma_2 = 100MPa$ and $\sigma_3 = 0MPa$. The yield strength of the material is 200MPa. The factor of safety calculated using Tresca (maximum shear stress) theory is $FOS_T$, and the factor of safety calculated using Von mises (maximum distortional energy) theory is $FOS_V$. Which one following relation is TRUE?

**Options :**

1. ✔ $FOS_T = FOS_V$

2. ✖ $FOS_T = 2\,FOS_V$

3. ✖ $FOS_T = 1.5\ FOS_V$

4. ✖ $FOS_T = 1.75 FOS_V$

**Question Number : 34 Question Id : 587587754 Display Question Number : Yes Is Question Mandatory : No**

The S-N curve for Aluminum becomes asymptotic nearly at

**Options :**

1. ✖ $10^6$ Cycles

2. ✖ $10^3$ cycles

3. ✖ $10^4$ Cycles

4. ✔ $10^8$ Cycles

**Question Number : 35 Question Id : 587587755 Display Question Number : Yes Is Question Mandatory : No**

A thin spherical pressure vessel of 200mm diameter and 1mm thickness is subjected to an internal pressure varying from 4 to 8MPa. Assume that the yield, ultimate, and endurance strength of the material are 600, 800, 400MPa, respectively. The factor of safety as per Goodman's relation is

**Options :**

1. ✖ 2.0

2. ✔ 1.6

3. ✖

1.4

4. ✖ 1.2

**Question Number : 36 Question Id : 587587756 Display Question Number : Yes Is Question Mandatory : No**

A shaft is subjected to a pure torsional moment. The maximum shear stress developed in the shaft is 100MPa. The yield and ultimate strengths of the shaft material in tension are 300 and 450MPa, respectively. The factor of safety using maximum distortion energy theory is

**Options :**

1. ✔ 1.73

2. ✖ 2.53

3. ✖ 1.56

4. ✖ 1.89

**Question Number : 37 Question Id : 587587757 Display Question Number : Yes Is Question Mandatory : No**

A 1.5KW motor is running at 1600rpm. It is to be connected to a stirrer running at 40rpm. The gearing arrangement suitable for this application is

**Options :**

1. ✖ differential gear

2. ✖ helical gear

3. ✖ spur gear

4. ✔ worm gear

**Question Number : 38 Question Id : 587587758 Display Question Number : Yes Is Question Mandatory : No**

The minimum number of the teeth on the pinion to operate without interference in standard full-height involute teeth gear mechanism with $20^0$ pressure angle is

**Options :**

1. ✖ 14

2. ✖ 12

3. ✔ 18

4. ✖ 32

**Question Number : 39 Question Id : 587587759 Display Question Number : Yes Is Question Mandatory : No**

A compound gear train with gears P,Q, R and S have number of teeth 20, 40, 15 and 20, respectively. Gear Q and R are mounted on the same shaft. Gear Q meshes with gear P and gear S meshes with gear R. The diameter of the gear Q is twice that of the gear R. If the module of the gear R is 2mm, the center distance in mm between gear P and S is

**Options :**

1. ✖ 40

2. ✔ 80

3. ✖ 120

4. ✖ 160

**Question Number : 40 Question Id : 587587760 Display Question Number : Yes Is Question Mandatory : No**

The process of shot peening increases the fatigue life of steel springs mainly because it results in

**Options :**

1. ✖ Surface hardening

2. ✖ Structural changes in the material

3. ✖ increased stiffness of the material

4. ✔ residual compression at the surface

**Question Number : 41 Question Id : 587587761 Display Question Number : Yes Is Question Mandatory : No**

For maximization L.P. model, the simplex method is terminated when all values.

**Options :**

1. ✔ $c_j - z_j \leq 0$

2. ✖ $c_j - z_j \geq 0$

3. ✖ $c_j - z_j = 0$

4. ✖ $z_j \leq 0$

**Question Number : 42 Question Id : 587587762 Display Question Number : Yes Is Question Mandatory : No**

The Dual of Max $Z_x = 2x_1 + 5x_2 + 6x_3$ subject to $5x_1 + 6x_2 - x_3 \leq 3$, $-2x_1 + x_2 + 4x_3 \leq 4$, $x_1 - 5x_2 + 3x_3 \leq 1$, $-3x_1 - 3x_2 + 7x_3 \leq 6$ and $x_1, x_2, x_3, \geq 0$ is

**Options :**

1. ✖ $-6y_1 + y_2 - 5y_3 - 3y_4 \geq 5$, $-y_1 + 4y_2 + 3y_3 + 7y_4 \geq 6$ and $y_1, y_2, y_3, y_4 \geq 0$

2. ✔ Min $Z_y = 3y_1 + 4y_2 + y_3 + 6y_4$ subject to $5y_1 - 2y_2 + 5y_3 - 3y_4 \geq 2$, $6y_1 + y_2 - 5y_3 - 3y_4 \geq 5$, $-y_1 + 4y_2 + 3y_3 + 7y_4 \geq 6$ and $y_1, y_2, y_3, y_4 \geq 0$

3. ✖ Min $Z_y = -3y_1 + 4y_2 - y_3 + 6y_4$ subject to $5y_1 - 2y_2 + 5y_3 - 3y_4 \geq 2$, $6y_1 + y_2 + 5y_3 - 3y_4 \geq 5$, $-y_1 + 4y_2 + 3y_3 + 7y_4 \geq 6$ and $y_1, y_2, y_3, y_4 \geq 0$

4. ✖ Min $Z_y = 3y_1 - 4y_2 + y_3 + 6y_4$ subject to $5y_1 + 2y_2 + 5y_3 - 3y_4 \geq 2$, $6y_1 - y_2 - 5y_3 - 3y_4 \geq 5$, $-y_1 + 4y_2 + 3y_3 + 7y_4 \geq 6$ and $y_1, y_2, y_3, y_4 \geq 0$

**Question Number : 43 Question Id : 587587763 Display Question Number : Yes Is Question Mandatory : No**

For a salesman who has to visit $n$ cities, which of the following are the ways of his tour plan

**Options :**

1. ✖ $n!$

2. ✖ $(n+1)!$

3. ✔ $(n-1)!$

4. ✖ $n$

**Question Number : 44 Question Id : 587587764 Display Question Number : Yes Is Question Mandatory : No**

The solution of a transportation problem with $m$ −rows(supplies) and $n$ −columns (destination) is feasible if the number of positive allocations are

**Options :**

1. ✗ $m+n$

2. ✗ $m \times n$

3. ✓ $m+n-1$

4. ✗ $m+n+1$

**Question Number : 45 Question Id : 587587765 Display Question Number : Yes Is Question Mandatory : No**

At present, a company purchases an item $X$ from outside suppliers. The consumption of this item is 10,000 units/year. The cost of the item is Rs. 5 per unit, and the ordering cost is estimated to be Rs 100 per order. The cost of carrying inventory is 25 percent. If the consumption rate is uniform, then the economic purchasing quantity is

**Options :**

1. ✓ 1265 units

2. ✗ 1266 units

3. ✗ 1365 units

4. ✗ 1366 units

**Question Number : 46 Question Id : 587587766 Display Question Number : Yes Is Question Mandatory : No**

For a given heat flow and for the same thickness, the temperature drop across the material will be maximum for

**Options :**

1. ✖ Copper

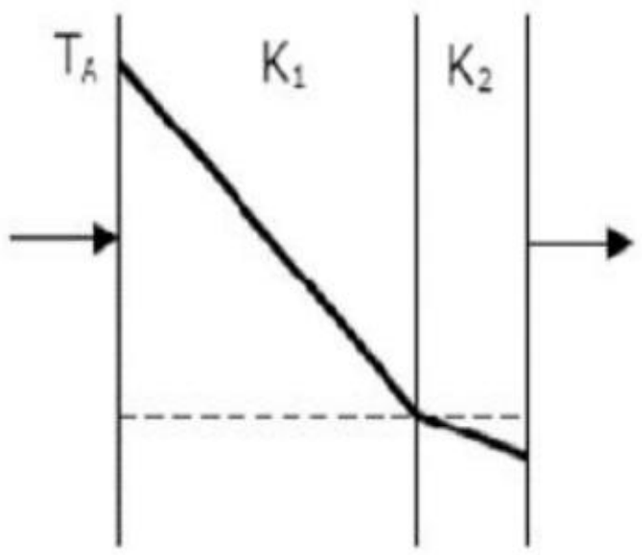
2. ✖ Steel

3. ✔ Glass-wool

4. ✖ Refractory brick

**Question Number : 47 Question Id : 587587767 Display Question Number : Yes Is Question Mandatory : No**

The temperature variation under steady heat conduction across a composite slab of two materials with thermal conductivities, $K_1$ and $K_2$ is shown in the figure. Then, which one of the following statements holds correct?




**Options :**

1. ✖ $K_1 > K_2$

2. ✖ $K_1 = K_2$

3. ✖ $K_1 = 0$

4. ✔ $K_1 < K_2$

**Question Number : 48 Question Id : 587587768 Display Question Number : Yes Is Question Mandatory : No**

For conduction through a spherical wall with constant thermal conductivity and the inner side temperature greater than outer wall temperature (one-dimensional heat transfer), what type of temperature distribution?

**Options :**

1. ✖ Linear

2. ✖ Parabolic

3. ✔ Hyperbolic

4. ✖ Ellipse

**Question Number : 49 Question Id : 587587769 Display Question Number : Yes Is Question Mandatory : No**

A hollow cylinder has length $L$, inner radius $r_1$, outer radius $r_2$, and thermal conductivity $k$. The thermal resistance of the cylinder for radial conduction is

**Options :**

1. ✔ $\frac{\ln(r_2/r_1)}{2\pi kL}$

2. ✖ $\frac{\ln(r_1/r_2)}{2\pi kL}$

3. ✖ $\frac{2\pi kL}{\ln(r_2/r_1)}$

4. ✖ $\frac{2\pi kL}{\ln(r_1/r_2)}$

**Question Number : 50 Question Id : 587587770 Display Question Number : Yes Is Question Mandatory : No**

Match Group A with Group B:

| Group A | | Group B | |
|---|---|---|---|
| **P:** | Biot number | **1:** | Ratio of buoyancy to viscous force |
| **Q:** | Grashof number | **2:** | Ratio of inertia force to viscous force |
| **R:** | Prandtl number | **3 :** | Ratio of momentum to thermal diffusivities |
| **S:** | Reynolds number | **4:** | Ratio of internal thermal resistance to boundary layer thermal resistance |

**Options :**

1. ✔ P-4, Q-1, R-3, S-2

2. ✖ P-4, Q-3, R-1, S-2

3. ✖ P-3, Q-2, R-1, S-4

4. ✖ P-2, Q-1, R-3, S-4

**Question Number : 51 Question Id : 587587771 Display Question Number : Yes Is Question Mandatory : No**

The questions given below, there are two statements marked as **Assertion (A)** and **Reason (R).** Mark your answer as per the codes provided below:

**Assertion (A):** In lumped heat capacity systems, the temperature gradient within the system is negligible
**Reason (R):** In analysis of lumped capacity systems, the thermal conductivity of the system material is considered very high irrespective of the size of the system

**Options :**

1. ✔ Both **A** and **R** are individually true, and R is the correct explanation of A

2. ✖ Both **A** and **R** are individually true, but R is **not** the correct explanation of A

3. ✖ **A** is true, but **R** is false

4. ✖ A is false, but **R** is true

**Question Number : 52 Question Id : 587587772 Display Question Number : Yes Is Question Mandatory : No**

Heisler charts are used to determine transient heat flow rate and temperature distribution when

**Options :**

1. ✖ Solids possess an infinitely large thermal conductivity

2. ✖ Internal conduction resistance is small and convective resistance is large

3. ✖ Internal conduction resistance is large and the convective resistance is small

4. ✔ Both conduction and convention resistance are almost of equal significance

**Question Number : 53 Question Id : 587587773 Display Question Number : Yes Is Question**

**Mandatory : No**

The ratios of the laminar hydrodynamic boundary layer thickness to the thermal boundary layer thickness of flows of two fluids P and Q on a flat plate are1/2 and 2 respectively. The Reynolds number based on the plate length for both the flows is $10^4$. The Prandtl and Nusselt numbers for P are 1/8 and 35, respectively. The Prandtl and Nusselt numbers for Q are respectively

**Options :**

1. ✔ 8 and 140

2. ✖ 8 and 70

3. ✖ 4 and 40

4. ✖ 4 and 35

**Question Number : 54 Question Id : 587587774 Display Question Number : Yes Is Question**

**Mandatory : No**

The emissive power of a blackbody is P. If its absolute temperature is doubled, the emissive power becomes

**Options :**

1. ✖ 2P

2. ✖ 4P

3. ✖ 8P

4. ✔ 16P

**Question Number : 55 Question Id : 587587775 Display Question Number : Yes Is Question**

**Mandatory : No**

Two infinite parallel plates are placed at a certain distance apart. An infinite radiation shield is inserted between the plates without touching any of them to reduce heat exchange between the plates. Assume that the emissivities of plates and radiation shield are equal. The ratio of the net heat exchange between the plates with and without the shield is

**Options :**

1. ✔ 1/2

2. ✖ 1/3

3. ✖ 1/4

4. ✖ 1/8

**Question Number : 56 Question Id : 587587776 Display Question Number : Yes Is Question**

**Mandatory : No**

For laminar forced convection over a flat plate, if the free stream velocity increases by a factor of 2, the average heat transfer coefficient.

**Options :**

1. ✖ Remains same

2. ✖ Decreases by a factor of $\sqrt{2}$

3. ✔ Rises by a factor of $\sqrt{2}$

4. ✖ rises by a factor of 4

**Question Number : 57 Question Id : 587587777 Display Question Number : Yes Is Question**

**Mandatory : No**

Consider the following statements with reference to Gas turbine cycle
(1) Regeneration increases thermal efficiency.
(2) Reheating decreases thermal efficiency.
(3) Cycle efficiency increases when the maximum temperature of the Cycle is increased

Which of these statements are correct?

**Options :**

1. ✖ 1,2 and 3

2. ✖ 2 and 3

3. ✖ 1 and 2

4. ✔ 1 and 3

**Question Number : 58 Question Id : 587587778 Display Question Number : Yes Is Question Mandatory : No**

Which one of the following statements is correct?

**Options :**

1. ✖ Efficiency of the Carnot cycle for the thermal power plant is high, and the work ratio is also high compared to the Rankin cycle.

2. ✔ Efficiency of the Carnot cycle is high, and the work ratio is low in comparison to the Rankine cycle.

3. ✖ Efficiency of the Carnot cycle is low, and the work ratio is also low compared to the Rankin cycle.

4. ✖ Both the Cycle has same efficiencies and work ratio.

**Question Number : 59 Question Id : 587587779 Display Question Number : Yes Is Question Mandatory : No**

For two cycles coupled in series, the topping cycle has an efficiency of 30%. The bottoming Cycle has an efficiency of 20%. The overall combined cycle efficiency is

**Options :**

1. ✖ 50%

2. ✔ 44%

3. ✖ 38%

4. ✖ 55%

**Question Number : 60 Question Id : 587587780 Display Question Number : Yes Is Question Mandatory : No**

Which type of energy is required to expend in vapour absorption refrigeration system?

**Options :**

1. ✖ High-grade energy

2. ✔ Low-grade energy

3. ✖ Medium-grade energy

4. ✖ Smart-grade energy

**Question Number : 61 Question Id : 587587781 Display Question Number : Yes Is Question Mandatory : No**

The ratio of partial pressure of water vapour in a mixture to the saturation pressure of water at the same temperature of the mixture is called as

**Options :**

1. ✖ Humidity

2. ✖ Partial humidity

3. ✖ Specific humidity

4. ✔ Relative Humidity

**Question Number : 62 Question Id : 587587782 Display Question Number : Yes Is Question Mandatory : No**

A reversible engine has an ideal thermal efficiency of 30%. When it is used as a refrigerating machine with all other conditions unchanged, the coefficient of performance will be

**Options :**

1. ✖ 1.33

2. ✔ 2.33

3. ✖ 3.33

4. ✖ 4.33

**Question Number : 63 Question Id : 587587783 Display Question Number : Yes Is Question**

**Mandatory : No**

The leaks in a refrigeration system using Freon are detected by

**Options :**

1. ✔ Halide torch which on detection produces greenish flame lighting

2. ✖ Sulphur sticks which on detection gives white smoke

3. ✖ Using reagents

4. ✖ Smelling

**Question Number : 64 Question Id : 587587784 Display Question Number : Yes Is Question Mandatory : No**

A heat pump working on a reversed Carnot cycle has a C.O.P. of 5. It works as a refrigerator taking 1 kW of work input. The refrigerating effect will be

**Options :**

1. ✖ 1 kW

2. ✖ 2 kW

3. ✖ 3 kW

4. ✔ 4 kW

**Question Number : 65 Question Id : 587587785 Display Question Number : Yes Is Question Mandatory : No**

The point through which force of buoyancy is supposed to act is called

**Options :**

1. ✖ Force of buoyancy

2. ✔ Centre of buoyancy

3. ✖ Meta-centric height

4. ✖ Centre of gravity

**Question Number : 66 Question Id : 587587786 Display Question Number : Yes Is Question Mandatory : No**

For a submerged curved surface, the horizontal component of force due to static liquid is equal to

**Options :**

1. ✖ Weight of liquid supported by the curved surface

2. ✔ Force on a projection of the curved surface on a vertical plane

3. ✖ Area of curved surface X pressure at the centroid of the submerged area

4. ✖ Area of curved surface + pressure at the centroid of the submerged area

**Question Number : 67 Question Id : 587587787 Display Question Number : Yes Is Question Mandatory : No**

Water is flowing through a pipe of 5 cm diameter under a pressure of 29.43 $N/cm^2$ (gauge) with a mean velocity of 2.0 m/s. Find the total pressure head per unit weight of the water at a cross-section, which is 5m above the datum line.

**Options :**

1. ✖ 0.3 m

2. ✖ 3 m

3. ✔ 30 m

4. ✖ 300 m

**Question Number : 68 Question Id : 587587788 Display Question Number : Yes Is Question Mandatory : No**

Which of the following instrument can be used for measuring the speed of a submarine moving in deep sea

**Options :**

1. ✖ Venturi meter

2. ✖ Orifice plate

3. ✔ Pitot tube

4. ✖ Rotameter

**Question Number : 69 Question Id : 587587789 Display Question Number : Yes Is Question Mandatory : No**

The jet ratio is defined as the ratio of

**Options :**

1. ✖ Diameter of the jet of water to diameter of Pelton wheel

2. ✖ Velocity of the vane to the velocity of the jet of water

3. ✖ Velocity of flow to the velocity of the jet of water

4. ✔ Diameter of Pelton wheel to diameter of the jet of water

**Question Number : 70 Question Id : 587587790 Display Question Number : Yes Is Question Mandatory : No**

Which of the following statement is correct?

**Options :**

1. ✖ Pelton wheel is a reaction turbine

2. ✖ Pelton wheel is a radial flow turbine

3. ✔ Pelton wheel is an impulse turbine

4. ✖ Pelton wheel is a mixed flow turbine

**Question Number : 71 Question Id : 587587791 Display Question Number : Yes Is Question Mandatory : No**

Pick out the wrong statement?

**Options :**

1. ✖ A fluid mass is free from shearing forces when it is made to rotate with a uniform velocity

2. ✖ Rise of water in capillary tubes reduces with the increasing diameter of capillary tubes

3. ✖

Laminar flow of viscous liquids is involved in the lubrication of various types of bearings

4. ✔ Newton's law of viscosity is not applicable to the turbulent flow of fluid with linear velocity distribution

**Question Number : 72 Question Id : 587587792 Display Question Number : Yes Is Question Mandatory : No**

Pick out the correct statement?

**Options :**

1. ✔ A Newtonian fluid obeys Newton's law of cooling

2. ✖ Human blood is a Newtonian fluid

3. ✖ For a non-Newtonian fluid, a straight line passes through the origin in a plot between shear stress and shear gradient

4. ✖ Thin lubricating oil is an example of a non-Newtonian fluid

**Question Number : 73 Question Id : 587587793 Display Question Number : Yes Is Question Mandatory : No**

Pick out the wrong statement?

**Options :**

1. ✖ The eddy viscosity is a function of the type of turbulence involved

2. ✔ The eddy viscosity is a fluid property

3. ✖ The viscosity of a gas increases with an increase in temperature

4. ✖ The viscosity of a liquid increase with a decrease in temperature

**Question Number : 74 Question Id : 587587794 Display Question Number : Yes Is Question Mandatory : No**

Hydraulic Machines fall under the category

**Options :**

1. ✔ Roto-dynamic machinery

2. ✖ Pulverizers

3. ✖ Kinetic machinery

4. ✖ Condensers

**Question Number : 75 Question Id : 587587795 Display Question Number : Yes Is Question Mandatory : No**

If the water flows from inwards to outwards, the turbine is known as

**Options :**

1. ✖ Tangential flow turbine

2. ✖ Turbulent low inward flow

3. ✖ Inward flow turbine

4. ✔ Outward flow turbine

**Question Number : 76 Question Id : 587587796 Display Question Number : Yes Is Question Mandatory : No**

For a given compression ratio, as cut off ratio increases in a diesel cycle, efficiency will

**Options :**

1. ✖ Increases

2. ✔ Decreases

3. ✖ Remains constant

4. ✖ Depend on other conditions

**Question Number : 77 Question Id : 587587797 Display Question Number : Yes Is Question Mandatory : No**

The optimum time to start the combustion is

**Options :**

1. ✔ (15-30) ° bTDC

2. ✖ (5-15) ° bTDC

3. ✖ (15-30) ° aTDC

4. ✖ (5-15) ° aTDC

**Question Number : 78 Question Id : 587587798 Display Question Number : Yes Is Question Mandatory : No**

For the same inlet conditions $P_1$, $V_1$, and the same peak pressure $P_3$, which of the following Cycle has the least efficiency

**Options :**

1. ✔ Otto

2. ✖ Diesel

3. ✖ Dual

4. ✖ Cannot predict with this data

**Question Number : 79 Question Id : 587587799 Display Question Number : Yes Is Question Mandatory : No**

Maximum dissociation in S.I. engine occurs in which of the following mixture?

**Options :**

1. ✖ Rich mixture

2. ✖ Stoichiometric mixture

3. ✔ Lean mixture

4. ✖ Ironic mixture

**Question Number : 80 Question Id : 587587800 Display Question Number : Yes Is Question Mandatory : No**

A single start thread of pitch 2mm is to be produced on a lathe having a lead screw with a double start thread of pitch of 4mm. The ration of speeds between the spindle and lead screw for this operation is

**Options :**

1. ✔ 1:2

2. ✖ 2:1

3. ✖ 1:4

4. ✖ 4:1

**Question Number : 81 Question Id : 587587801 Display Question Number : Yes Is Question Mandatory : No**

A medium carbon steel workpiece is turned on a lathe at 50 m/min. Cutting speed is 0.8 mm/rev feed and 1.5 mm depth of cut. What is the rate of metal removal?

**Options :**

1. ✖ 1000 $mm^3/min$

2. ✔ 60,000 $mm^3/min$

3. ✖ 20,000 $mm^3/min$

4. ✖ 40,000 $mm^3/min$

**Question Number : 82 Question Id : 587587802 Display Question Number : Yes Is Question Mandatory : No**

A lead-screw with half nuts in a lathe, free to rotate in both directions has

**Options :**

1. ✖ V-threads

2. ✖ Whitworth threads

3. ✖ Buttress threads

4. ✔ ACME threads

**Question Number : 83 Question Id : 587587803 Display Question Number : Yes Is Question Mandatory : No**

The hardness of a grinding wheel is determined by the

**Options :**

1. ✖ Hardness of the abrasive grains

2. ✔ Ability of the bond to retain the abrasives

3. ✖ Hardness of the bond

4. ✖ Ability of the grinding wheel to penetrate the workpiece

**Question Number : 84 Question Id : 587587804 Display Question Number : Yes Is Question Mandatory : No**

Crater wear always starts at some distance from the tool tip because at that

**Options :**

1. ✖ Cutting fluid does not penetrate

2. ✔ Chip tool interface temperature is maximum

3. ✖ Normal stress on rake face is maximum

4. ✖ Tool strength is minimum

**Question Number : 85 Question Id : 587587805 Display Question Number : Yes Is Question Mandatory : No**

In E.C.M., the material removal rate will be higher for metal with

**Options :**

1. ✖ Large Density

2. ✖ Larger valency

3. ✖ Larger chemical absorption tendency

4. ✔ Large chemical Weight

**Question Number : 86 Question Id : 587587806 Display Question Number : Yes Is Question Mandatory : No**

In a grinding wheel marked with AA-48-L-7-V-25, L refers to

**Options :**

1. ✖ Abrasive type

2. ✖ Wheel structure

3. ✔ Wheel Hardness

4. ✖ Manufactures code

**Question Number : 87 Question Id : 587587807 Display Question Number : Yes Is Question Mandatory : No**

For gas welding, a particular Job using a neutral oxy-acetylene flame. The acetylene consumption is 10 liters. The oxygen consumption from the cylinder in liters will be

**Options :**

1. ✖ 5

2. ✔ 10

3. ✖ 15

4. ✖ 20

**Question Number : 88 Question Id : 587587808 Display Question Number : Yes Is Question Mandatory : No**

The strength of a brazed joint

**Options :**

1. ✖ Decreases with an increase in the gap between the two joining surfaces

2. ✖ Increases with increase in the gap between the two joining surfaces

3. ✔ Decreases up to a certain gap between the two joining surfaces beyond which it increases

4. ✖ Increases up to a certain gap between the two joining surfaces beyond which it decreases

**Question Number : 89 Question Id : 587587809 Display Question Number : Yes Is Question Mandatory : No**

A mould has a down sprue whose length is 20cm, and the cross-sectional area at the base of the down sprue is 1 $cm^2$. The down sprue feeds a horizontal runner leading into the mould cavity of volume 1000 $Cm^3$. The time required to fill the mould cavity will be

**Options :**

1. ✗ 4.05 sec

2. ✓ 5.05 sec

3. ✗ 6.05 sec

4. ✗ 7.25 sec

**Question Number : 90 Question Id : 587587810 Display Question Number : Yes Is Question Mandatory : No**

An expandable pattern is used in

**Options :**

1. ✗ slush casting

2. ✗ squeeze casting

3. ✗ Centrifugal casting

4. ✓ Investment casting

**Question Number : 91 Question Id : 587587811 Display Question Number : Yes Is Question Mandatory : No**

Which of the following engineering materials is the most suitable candidate for hot chamber die casting?

**Options :**

1. ✖ Low carbon steel

2. ✖ Titanium

3. ✖ Copper

4. ✔ Tin

**Question Number : 92 Question Id : 587587812 Display Question Number : Yes Is Question Mandatory : No**

Collapsible tubes are made by

**Options :**

1. ✖ Drawing

2. ✔ Extrusion

3. ✖ Spinning

4. ✖ Rolling

**Question Number : 93 Question Id : 587587813 Display Question Number : Yes Is Question Mandatory : No**

When 1% plane carbon steel is slowly cooled from the molten state to 740 degrees C, the resulting structure will contain

**Options :**

1. ✖ Pearlite and cementite

2. ✖ Ferrite and cementite

3. ✖ Austinite and Ferrite

4. ✔ Austinite and Cementite

**Question Number : 94 Question Id : 587587814 Display Question Number : Yes Is Question Mandatory : No**

If a particular Fe-C alloy contains less than 0.83% carbon, then it is called as

**Options :**

1. ✖ High-speed steel

2. ✔ Hypo eutectoid steel

3. ✖ Hyper eutectoid steel

4. ✖ Cast Iron

**Question Number : 95 Question Id : 587587815 Display Question Number : Yes Is Question Mandatory : No**

Cold working produces the following effects
i) Stresses are set up in the material
ii) Grain Structure get distorted
iii) Strength and Hardness of the metal are decreased
iv) Surface finish is reduced

**Options :**

1. ✖ i,ii,iii

2. ✔ i,ii,iv

3. ✖ i,iii

4. ✖ ii,iii,iv

**Question Number : 96 Question Id : 587587816 Display Question Number : Yes Is Question Mandatory : No**

The iron-carbon diagram and the T.T.T. Curves are determined under

**Options :**

1. ✔ Equilibrium and Non- Equilibrium conditions, respectively

2. ✖ Non- Equilibrium and equilibrium conditions, respectively

3. ✖ Equilibrium conditions for both

4. ✖ Non- Equilibrium conditions for both

**Question Number : 97 Question Id : 587587817 Display Question Number : Yes Is Question Mandatory : No**

Which method is used to test the straightness of an object?

**Options :**

1. ✖ Indicator method

2. ✖ Interference method

3. ✔ Wedge method

4. ✖ Straightness testing method

**Question Number : 98 Question Id : 587587818 Display Question Number : Yes Is Question Mandatory : No**

What does allowance represent in clearance fits?

**Options :**

1. ✔ It represents minimum clearance and is positive

2. ✖ It represents maximum clearance and is positive

3. ✖ It represents minimum clearance and is negative

4. ✖ It represents maximum clearance and is negative

**Question Number : 99 Question Id : 587587819 Display Question Number : Yes Is Question Mandatory : No**

Which quality management program is related to the maintenance of plants and equipments?

**Options :**

1. ✖ Environmental management systems

2. ✖ Fault tree analysis

3. ✖ Failure mode effect analysis

4. ✔ Total productive maintenance

**Question Number : 100 Question Id : 587587820 Display Question Number : Yes Is Question Mandatory : No**

The state of a pure substance can be fixed by specifying

**Options :**

1. ✖ One Property

2. ✔ Two Properties

3. ✖ Three Properties

4. ✖ Four Properties

**Question Number : 101 Question Id : 587587821 Display Question Number : Yes Is Question Mandatory : No**

If the time taken by a system to execute a process through a finite gradient is infinitely large, the process.

**Options :**

1. ✔ Becomes reversible

2. ✖ Remains irreversible

3. ✖ Becomes Isothermal

4. ✖ Becomes adiabatic

**Question Number : 102 Question Id : 587587822 Display Question Number : Yes Is Question Mandatory : No**

Ice kept in a well-insulated thermos flask is an example of which system?

**Options :**

1. ✖ Closed System

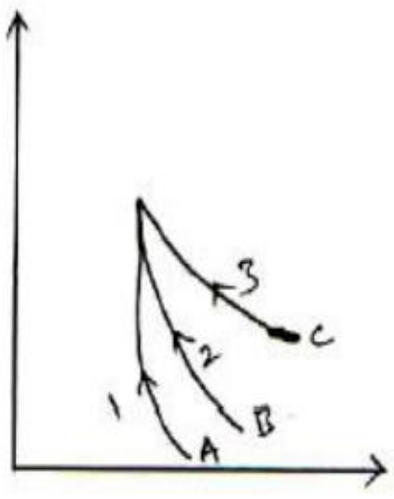
2. ✔ Isolated System

3. ✖ Open System

4. ✖ Non-flow adiabatic system

**Question Number : 103 Question Id : 587587823 Display Question Number : Yes Is Question Mandatory : No**

Three different gases undergo three polytropic processes. Gas A goes by process 1, B by process 2 and C by process 3. The polytropic index for gases A, B & C respectively, are




**Options :**

1. ✖ 1.33; 1.67; 1.4

2. ✖ 1.33; 1.4; 1.67

3. ✖ 1.4; 1.33; 1.67

4. ✔ 1.67; 1.4; 1.33

**Question Number : 104 Question Id : 587587824 Display Question Number : Yes Is Question Mandatory : No**

There is no work transfer involved in _____ process

**Options :**

1. ✖ Adiabatic expansion

2. ✖ Isothermal expansion

3. ✖ Polytropic Expansion

4. ✔ Free expansion

**Question Number : 105 Question Id : 587587825 Display Question Number : Yes Is Question Mandatory : No**

For a steady flow through an insulated horizontal constant diameter pipe, this property remains constant.

**Options :**

1. ✔ Enthalpy

2. ✖ Internal Energy

3. ✖ Entropy

4. ✖ Volume

**Question Number : 106 Question Id : 587587826 Display Question Number : Yes Is Question Mandatory : No**

Work done on a closed system is 20 kJ/kg, and 40 kJ/kg of heat is rejected from the system, then its internal energy decreases by

**Options :**

1. ✖ 20 kJ/kg

2. ✔ 60 kJ/kg

3. ✖ - 20 kJ/kg

4. ✖ - 60 kJ/kg

**Question Number : 107 Question Id : 587587827 Display Question Number : Yes Is Question Mandatory : No**

The energy of an isolated system

**Options :**

1. ✖ is always decreasing

2. ✔ is always constant

3. ✖ is always increasing

4. ✖ Cannot be predicted

**Question Number : 108 Question Id : 587587828 Display Question Number : Yes Is Question Mandatory : No**

When the heat transfer into a system is more than the work transfer out of the system, then.

**Options :**

1. ✖ The internal energy of the system remains constant

2. ✖ The internal energy of the system decreases

3. ✔ The internal energy of the system increases

4. ✖ Cannot be predicted

**Question Number : 109 Question Id : 587587829 Display Question Number : Yes Is Question Mandatory : No**

What is the cyclic integral of dQ/T for a reversible process?

**Options :**

1. ✖ Less than zero

2. ✔ Zero

3. ✖ More than zero

4. ✖ Cannot be predicted

**Question Number : 110 Question Id : 587587830 Display Question Number : Yes Is Question Mandatory : No**

Air is being forced by the bicycle pump into a tyre against a pressure of 4.5 bars. A slow downward movement of piston can be approximated as.

**Options :**

1. ✖ Isobaric Process

2. ✖ Adiabatic Process

3. ✔ Throttling Process

4. ✖ Isothermal Process.

**Question Number : 111 Question Id : 587587831 Display Question Number : Yes Is Question Mandatory : No**

The general solution of the differential equation $\frac{d^2y}{dx^2}+y=0$ is

**Options :**

1. ✖ $y=c_1e^{x}+c_2e^{-x}$

2. ✖ $y=c_1\cos x+c_2e^{x}$

3. ✔ $y=c_1\cos x+c_2\sin x$

4. ✖ $y=c_1e^{-x}+c_2\sin x$

**Question Number : 112 Question Id : 587587832 Display Question Number : Yes Is Question Mandatory : No**

Consider the differential equation $\frac{d^2y}{dx^2}+2\frac{dy}{dx}+y=0$ with $y(0)=1,\ y'(0)=-2$.

The solution is

**Options :**

1. ✔ $(1-x)e^{-x}$

2. ✖ $(1+x)e^{x}$

3. ✖ $(1+x)e^{-x}$

4. ✖ $(1-x)e^{x}$

**Question Number : 113 Question Id : 587587833 Display Question Number : Yes Is Question Mandatory : No**

$\int_{0}^{1}\int_{x^2}^{2-x} xy\,dxdy$ is equal to

**Options :**

1. ✖ $\frac{3}{4}$

2. ✔ $\frac{3}{8}$

3. ✖ $\frac{2}{5}$

4. ✖ $\frac{2}{7}$

**Question Number : 114 Question Id : 587587834 Display Question Number : Yes Is Question Mandatory : No**

The Fourier series for $f(x)=e^{-x}$ in the interval $0<x<2\pi$ is given by

$\frac{a_0}{2}+\sum_{n=1}^{\infty}a_n\cos n\theta+\sum_{n=1}^{\infty}b_n\sin n\theta$. Then $a_0=$

**Options :**

1. ✔ $\frac{1-e^{-2\pi}}{\pi}$

2. ✖ $\frac{1+e^{-\pi}}{\pi}$

3. ✖ $e^{-\pi}$

4. ✖ $e^{-\pi}+1$

**Question Number : 115 Question Id : 587587835 Display Question Number : Yes Is Question Mandatory : No**

The order of convergence in Newton Raphson method is

**Options :**

1. ✔ 2

2. ✖ 0

3. ✖ 1

4. ✖ 3

**Question Number : 116 Question Id : 587587836 Display Question Number : Yes Is Question Mandatory : No**

A bag contains 6 white, 7 red and 5 black balls. The chance that three balls drawn at the random are all white is

**Options :**

1. ✖ $\frac{5}{18}$

2. ✖ $\frac{1}{204}$

3. ✖ $\frac{2}{3}$

4. ✔ $\frac{5}{204}$

**Question Number : 117 Question Id : 587587837 Display Question Number : Yes Is Question Mandatory : No**

A problem of mechanics is given to three students A, B, C whose chances of solving it is $\frac{1}{2}, \frac{1}{3}$ and $\frac{1}{4}$ respectively. The probability that problem to be solved is

**Options :**

1. ✖ $\frac{1}{2}$

2. ✖ $\frac{2}{3}$

3. ✖ $\frac{1}{4}$

4. ✔ $\frac{1}{4}$

**Question Number : 118 Question Id : 587587838 Display Question Number : Yes Is Question Mandatory : No**

The rank of the matrix $\begin{bmatrix} 1 & 2 & 3 \\ 3 & 4 & 4 \\ 7 & 10 & 12 \end{bmatrix}$ is

**Options :**

1. ✔ 3

2. ✖ 2

3. ✖ 1

4. ✖ 0

**Question Number : 119 Question Id : 587587839 Display Question Number : Yes Is Question Mandatory : No**

The poles of $f(z)=\frac{1}{z^2-1}$ are

**Options :**

1. ✖ 0, 1

2. ✖ -1, 0

3. ✔ -1, 1

4. ✖ 2,1

**Question Number : 120 Question Id : 587587840 Display Question Number : Yes Is Question Mandatory : No**

Consider the function $f(z)=xy+iy$

**Options :**

1. ✖ analytic

2. ✖ not continuous everywhere

3. ✔ not analytic

4. ✖ not continuous at $z=0$